



LIGHTER weight, a means to lower cost—plumber on Fred J. Walsh project at Markham, Ill., carries in a full-size bathtub and kitchen sink of new formed metal.

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and Building Age

NAME REGISTERED U. S. PATENT OFFICE AND CANADIAN REGISTRAR OF TRADE MARKS

FEBRUARY, 1937

59th Year

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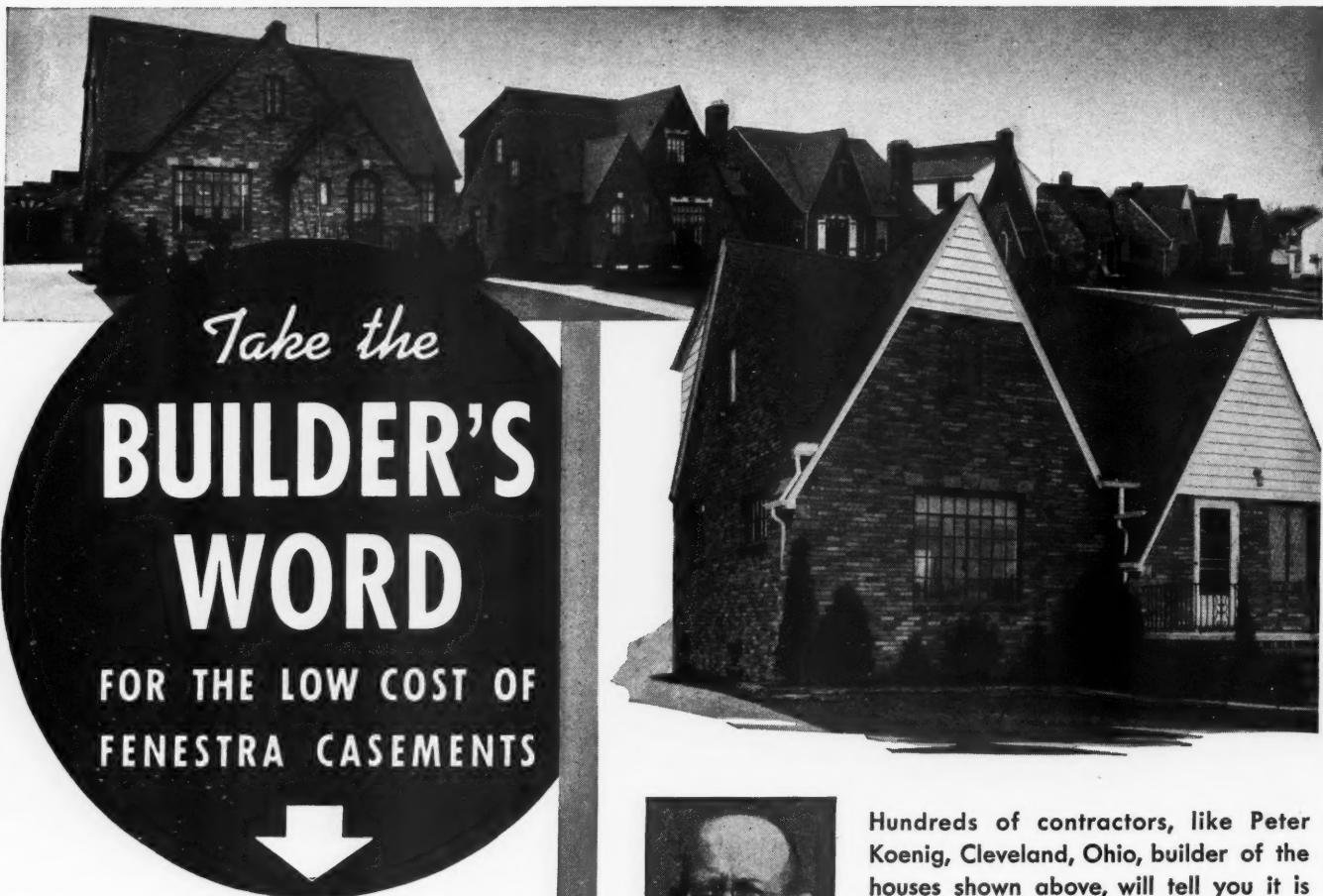
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BUILDER'S
WORD
 FOR THE LOW COST OF
FENESTRA CASEMENTS

"The low cost of Fenestra Steel Windows is only one of the reasons why we use them. Their attractiveness and the many conveniences they give home owners help sell our houses."

PETER KOENIG, Cleveland, Ohio

"It was something of a surprise to us to find, on doing a little figuring, that Fenestra Steel Casements actually mean a big saving to the builder. It takes so much less time to install these casements than it does ordinary wood windows that the total cost to us is much less."

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"It has been our experience that Fenestra Steel Casement Windows don't add a penny to the cost of our houses."

KITCHEN BUILDING CO., Detroit, Mich.

"We have used your Fenestra Steel Casements in about 400 homes. We found we were able to offer better value in a modern type window at no greater expense than the old-fashioned window."

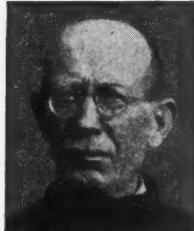
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"Home buyers are actually surprised when they learn that there is no extra charge for a house equipped with your modern Fenestra Casements."

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"Low installation costs permit me to equip the homes I build with Fenestra Steel Casements at no extra charge to the owner."

RAY H. YOUNG, Deer Park, Ohio



Peter Koenig

Hundreds of contractors, like Peter Koenig, Cleveland, Ohio, builder of the houses shown above, will tell you it is their experience that Fenestra Casements cost no more than double-hung wood windows—often cost less. And these builders of both large and small houses will tell you why . . . Fenestra Steel Casements

come complete . . . sash fitted and hung, painted, hardware ready to attach. They save installation time, labor and material.

Equally important are the attractive appearance and the many conveniences these better steel windows provide:—finger touch opening, no sticking, safe cleaning, inside bronze screens for summer, inside storm sash for winter which eliminate condensation and promote air conditioning . . . all help SELL your houses.

Detroit Steel Products Co.,
 2252 E. Grand Blvd., Detroit, Mich.

Please send me your Leaflet on Fenestra Storm Sash, and Sheet on Window Costs.

Name _____

Address _____

THE COMPLETE WINDOW
Fenestra

PUBLISHER'S PAGE

Selling Better Homes

"OUR homes average farther below our general standard of living than anything else. Most people do not have better homes *because they do not want them*. They do not want them *because they do not know what they are*. Nobody ever wants anything that he knows nothing about. The great task of the *home building industry as a whole* is to make a large majority of the people know what better homes are—why and how they afford a convenience, comfort and even luxury that all will desire when *sold a desire for them*."

These statements regarding the home situation in the United States made a few years ago by a student of the subject are somewhat less true now only because the model homes exhibited in a good many communities have educated some of the people regarding what better homes are.

Both before and at the bottom of the depression the automobiles most people had were far better in proportion than their homes. And yet during recovery the increase in the production of better automobiles has been far greater than the increase in the production of better homes. Why?

THE automobile companies compete strenuously with each other, but they energetically co-operate to *enlarge the total market for all of them*. They spare neither brains, effort nor money to show the public that there are better automobiles and that its convenience, comfort and happiness depend on having them.

The home building industry does not do enough selling of *better homes*.

Its manufacturers devote themselves to trying to sell the *various kinds of materials and equipment* that they make. It will never be able to compete with the automobile industry until it organizes itself *nationally and locally*, not merely to sell lumber or cement or brick or plumbing or air-conditioning, but to make the public know *what better homes are*, how much they cost and why and how they are the best investment financially and in convenience, comfort and happiness that it is possible to make.

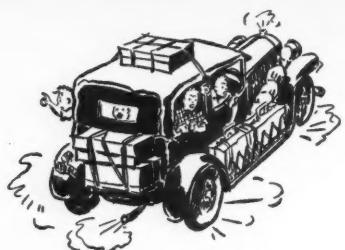
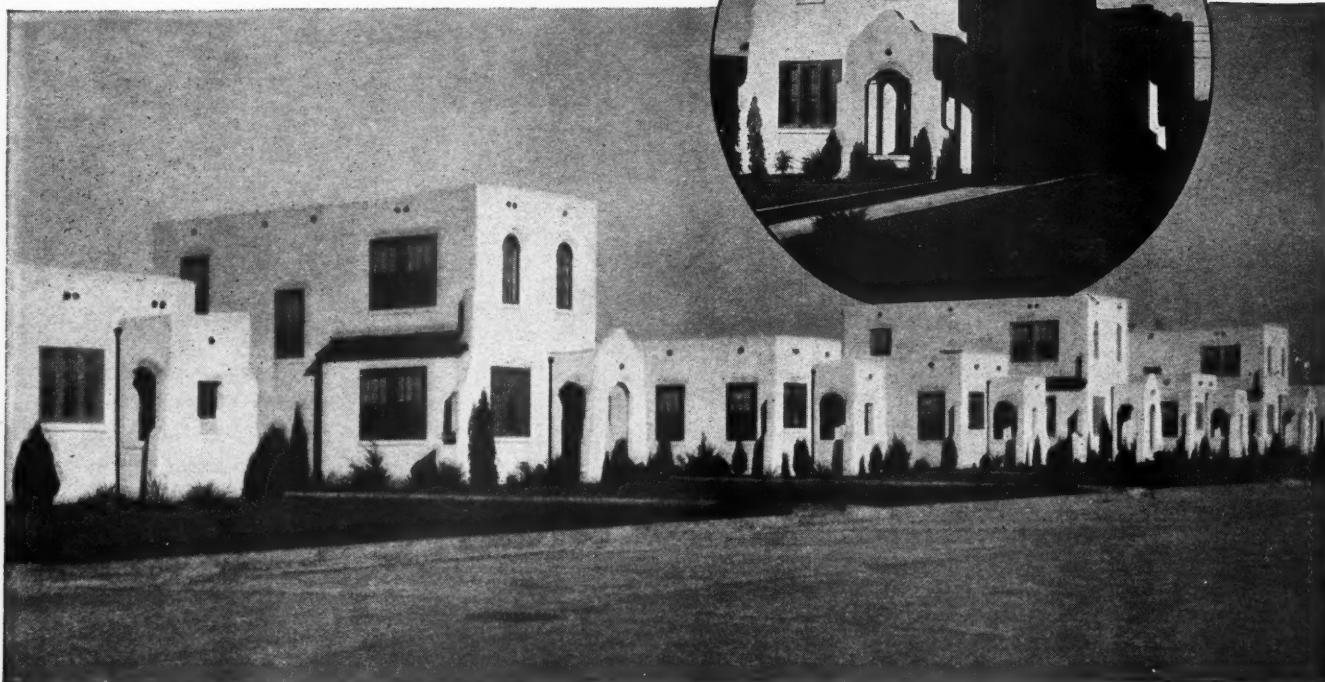
THERE ought to be national and local Better Homes Associations composed of all the industries that would benefit by the building of millions of better homes. They could and should effectively advertise and propagandize the gospel of Better Homes. They could greatly enlarge the market for all the industries, companies and individuals that depend largely or entirely on home building for the sale of their materials, equipment and services.

Home building is increasing; but even this year there will be only one-half as much as in 1928. Where is the leadership that will take the initiative in the organization of the industry necessary to enable it, first, to take full advantage of the improvement in economic conditions occurring, and, second, to contribute its full share toward the unprecedented prosperity this country should enjoy during the next decade?

Samuel O. Dunn

SIMMONS-BOARDMAN PUBLISHING CORPORATION: SAMUEL O. DUNN, CHAIRMAN OF THE BOARD; HENRY LEE, PRESIDENT; BERNARD L. JOHNSON, ROBERT H. MORRIS, DELBERT W. SMITH AND ROBERT E. CLEMENT, VICE-PRESIDENTS; ROY V. WRIGHT, SECRETARY; E. T. HOWSON, ASSISTANT SECRETARY; JOHN T. DE MOTT, TREASURER. EXECUTIVE AND EDITORIAL OFFICES: 105 WEST ADAMS STREET, CHICAGO; 30 CHURCH STREET, NEW YORK CITY.

Architect R. B. Spencer of Memphis, used Atlas White portland cement for exterior finish of the Berryman's Court Tourist on U. S. 61, South Memphis



{ "Yes, by gosh, it's a
Tourist Camp!" }

● Tourists motoring along U. S. Highway 61, South Memphis, are always amazed at the unique Berryman's Court Tourist. For this is probably the last word in what nomads of the highways call "tourist camps."

In designing the single and double story units of the court, Architect R. B. Spencer has achieved beauty and distinctiveness. Atlas White portland cement was used for exterior finish of all buildings.

Beautiful—permanent—economical—these

sum up the case for Atlas White stucco. From simple designs to intricate pattern effects. From pure white to deep colors . . . whatever the effect you wish, it can be readily achieved with Atlas White.

This freedom of design, combined with economy and, above all, *permanency*, is putting stucco for exteriors and interior finish to the fore in today's building revival. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South LaSalle Street, Chicago.



A FACTORY PREPARED STUCCO IS PREFERABLE

5-9

STUCCO
MADE WITH **Atlas White** PORTLAND
CEMENT

AMERICAN BUILDER

AND BUILDING AGE

For Constructive Selling

THE unusual picture of a building industry group getting together on an agreed program of advertising themes for its membership, instead of wandering off into side lanes of competitive arguments, was revealed recently at the executive headquarters of the Air Conditioning Manufacturers' Association. A "theme schedule" has been prepared by a special committee of this association covering all advertising throughout 1937 and designed for use by all association members.

Manufacturers of air conditioning equipment, like all other groups serving the building field, have had in the past a perfectly natural and understandable habit of producing competitive programs of advertising that actually served to slow up purchases by disturbing and confusing prospects through claims and counter-claims. This recommended program, on the contrary, is to adhere to the basic advantages of air conditioning, featuring special selling opportunities at the appropriate seasons and in general guiding manufacturers and suppliers in telling a united, authoritative story about the human comfort applications of their products which mean most to the general public.

Lesson Here for All

Other classifications of manufacturers, both those producing structural materials and those producing equipment for buildings, might well lay down similar rules for their own advertising and selling efforts to the end that the buying and building public might be better informed and encouraged and less confused.

"Nothing in this air conditioning 'platform' will deter an individual manufacturer from going into full details about his own methods and equipment," the announcement declares, "but in any selling a principle has to be sold before a product can be sold, and that is what this agreement on themes is designed to accomplish."

The "advertising themes" drawn up under this program to assure the successful selling of air conditioning equipment are probably not the most desirable ones for such other trade groups as coal stoker manufacturers, insulation producers, or the bathroom fixture interests. However, the air conditioning themes may well serve as a guide to these and other building industry groups.

Under the plan of campaigning adopted for the 1937 forward march of air conditioning, "buy and install now" will be emphasized beginning at once and running through March. The terrific heat wave of 1936 cost many

millions of dollars in plant shutdowns, sharply reduced store traffic and lowered efficiency of workers where air conditioning installations were not available; the industry's recommended basic copy principle for April and May consequently will stress the necessity for prompt action to avoid loss of business this summer. "Urgent necessity" is the recommended theme for mid-May and June copy, with hot humid days close at hand and the 1936 heat wave recalled as an indication of conditions that are about to be repeated. June and July copy will assure laggards that they still may salvage something of the summer's business, and also have time to profit by the features of fall and winter air conditioning. Recommended copy for the remainder of the year will stress the health features of air conditioning which, it will be shown, actually are year 'round advantages and are more important in their various ramifications than the comfort features for which summer air conditioning alone is known.

The profit angle, health, employee efficiency and customer comfort will be points mentioned consistently in copy throughout the year.

Such intelligent planning for industry selling, free from destructive jealousies and confidence-wrecking competition, deserves all success. It strongly appeals to this publication that all branches and divisions of the building industry should become truly sales minded and adopt policies of "public information" that will promote confidence and action on the part of the general public which should be buying and building homes and modernizing their business property. The effectiveness of such teamwork is shown by the rapid growth of air conditioning sales.

The final quarter of 1936 was the best in the air conditioning industry's history, and 1937 will far exceed any previous year, according to W. B. Henderson, executive of the association. He recently declared that the members of the association already have one-third of their anticipated 1937 volume either sold or being actively negotiated.

FARM HOME PLANNING

BUILDING industry men active in rural areas will get many a useful pointer from an analysis of some 6000 letters from farm women recently questionnaired. Written on school tablets, fine writing papers, butcher's paper, these letters throb with the longings of American farm

women, responding to the simple question—"What is your ideal farm home like?"

A summary of their dreams reveals the following specifications for the ideal 1937 farm home:

The house should be two stories, or one and one-half stories high, opinion being equally divided. Only white is mentioned as the proper color for the ideal farm home; and in the proportion of six to one a frame house was preferred.

More than half preferred the four bedroom house as the ideal, and of the other half a majority wished for five bedrooms. In both categories more than half felt the need of one downstairs bedroom, sometimes specified as the hired man's room and sometimes thought of to save steps in case of sickness.

More than half the farm women had this matter of a special room for the hired man very much in mind, almost always mentioning this before any other point. And second only to the room for the hired man came requests for a coat and washroom opening onto the back porch, where the men from the fields might clean up before "tracking" into the house.

Almost half asked for one or two screen porches, for separate laundry rooms, for two kinds of storage rooms—one for vegetables and one for canned goods; for one or two bathrooms; for flower rooms; for fireplaces; built-in cupboards in kitchen and dining rooms; built-in furniture in living room, such as bookcases, buffets, and window stands.

One-third added to the ideal home, milk rooms, hardwood floors and French doors; and still others mentioned playrooms for the children, dumb waiters from kitchen to cellar and clothes chutes.

And around the house, one-third of the women spoke of beautiful lawns, old trees and fine plantings of shrubbery to enhance the appearance of the home, completing the picture of the ideal farm home of today.

OPPORTUNITIES IN RETAIL STORE MODERNIZATION

AN analysis of the physical condition and appearance of approximately eight thousand small and medium-sized stores and service establishments in 23 selected cities of the United States has uncovered the fact that over half are in need of modernization in varying degrees, according to a study made by the U. S. Department of Commerce. The cities in which the information was collected were selected on a sampling basis and are, therefore, believed to reflect the approximate general conditions prevailing throughout the country. Numberless contract opportunities for builders are revealed regardless of whether or not Title I of the National Housing Act is extended beyond April 1.

The analysis shows a generally unsatisfactory appearance of store fronts. The most frequent recommendations call for the painting and refinishing of store exteriors

and the installing of new or the replacing of existing outside signs.

Painting or repairing of walls and ceilings and the improvement of store lighting are recorded as the greatest interior needs.

"Although retailers in greater numbers than ever are recognizing that modernization of their establishments is a good investment, this analysis of store needs clearly reveals that existing opportunities for the modernization of retail stores in the United States are great," was the comment of Alexander V. Dye, chief of the Department, after studying the report.

Mechanical Refrigeration. It was shown in this inspection that about three-fourths of the grocery and drug stores in the sample are using mechanical refrigeration, while 61 per cent of the restaurants have this equipment.

Washrooms. Washrooms seem to be a minimum requirement in an establishment where people are employed, yet this facility was missing in a sizable proportion of most kinds of business observed. Eighteen per cent of all the stores in the sample have no washroom.

Electric Signs. A large majority of the stores observed do not have good exterior electric signs, 34 per cent of the stores lacking this feature.

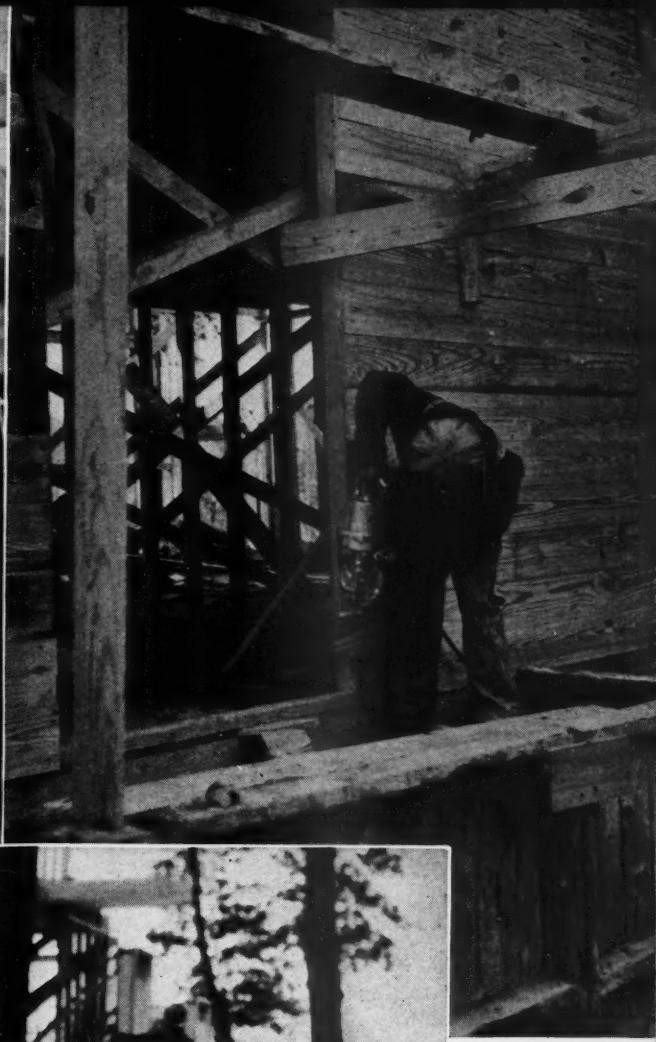
Interior Lighting. Store lighting was found inadequate in about 29 per cent of the cases.

Apparel Stores. These stores make a better showing on exterior and interior appearance than any other kind of business surveyed. Nearly one-third of them, however, offer opportunity for improvement. They are frequently reported as needing outside signs replaced or new ones installed. Twelve per cent have no washrooms. Over one-fourth need the painting or repairing of walls and ceilings and the rearrangement of fixtures. One-fifth of these stores need better or additional interior lighting and better floors.

Drug Stores. Drug stores rank first in the use of electric or neon outside signs, public telephones, telephone booths, washrooms, mechanical refrigeration, cash registers, and modern fixtures. Nearly one-fifth of them need the store fronts painted or refinished, and over 13 per cent require the installation or replacing of outside signs. Walls and ceilings need painting or repairing in 30 per cent of the drug stores. Nearly one-fourth need new or additional lighting fixtures.

Grocery Stores. Thirty-seven per cent have steps at the entrance but in nearly one-half of such cases ramps could be built; 25 per cent of the stores have no washrooms; 45 per cent need the walls and ceilings painted or repaired; over one-third of the stores need better interior lighting.

Restaurants. Fifty-seven per cent of the restaurants have neon or electric outside signs. They made the best showing in this respect of any of the business groups observed. Thirteen per cent have no washrooms. It is surprising to find this condition in eating and drinking places. Over 26 per cent call for the painting or refinishing of store fronts; nearly two-thirds need some kind of interior modernization.



Contractors Rely on Power Equipment as Building Volume Rises and Skilled Labor Shortage Develops

HOUSE TYPE	LOT NUMBER	STREET NUMBER	Excavations
			Foundations
			Framing
			Boarding
			Stairs (1st. story)
			Lally Columns
			Chimney
			Stairs (basement)
			Concrete Steps
			Porch Footings
			Plumbing (rough)
			Water
			Sewer
			Duct Work
			Electric work
			Firestopping
			Exterior Trim
			Roof Shingles
			Clapboards
			Window Frames
			Sash
			Exterior Door Frames
			Strapping
			Insulation
			Lathing
			Plaster (1st. coat)
			Plaster (white coat)
			Concrete
			Basement Floor
			Waterproofing
			Interior Door Frames
			Fireplace and Hearth
			Interior Trim
			Exterior Paint (priming)
			Exterior Paint (2nd coat)
			Exterior Paint (finish coat)
			Kitchen Cabinets
			Interior Doors
			Interior Paint (priming)
			Interior Paint (2nd coat)
			Interior Paint (finish coat)
			Oak Floors
			Linoleum
			Tilework
			Plumbing Fixtures
			Electric Fixtures
			Wallpaper
			Heating System
			Gas Stove
			Back Fill
			Grading
			Drives and walls
			Landscaping
			Shades and blinds
			Porch Trim
			Wall Shingles

CHART I—Each important step in building the Arlmont homes is listed and checked off on this Progress Chart when completed.

Ford Methods Bring Lower Costs in

MANY people have theorized about bringing "mass production methods" to the building of homes, but W. W. Rausch, a practical builder of Boston, is one of the first to do something successful along this line.

Builder Rausch is president of a new home building organization which is developing Arlmont Village, a complete home community a few minutes' drive outside of Boston.

The project is laid out for 425 homes, of which 35 were under construction when the project was visited by this writer in December. Work was going ahead full blast in spite of the New England zero weather.

Builder Rausch, wearing big boots and a heavy overcoat, was pushing his crew to the utmost to get the houses ready for sale so they could fill some of the 781 applications which had already been made by interested home buyers. More than 1500 people had visited the Model House which had been completed a week before.

Rausch is an engineer and contractor whose principal previous experience has been in heavy construction and in large-scale housing work. He was formerly Massachusetts director of the PWA Housing Division, in charge of the three-million-dollar Cambridge project and the six-million-dollar South Boston project.

In Arlmont Village he is attempting to provide houses within the reach of the average man—the "Ford" market. It is his ambition to bring Ford production methods to small houses and he has drawn upon his experience in large-scale building to do so.

Power Saw Methods

Backbone of the Arlmont home building technique is the use of power equipment. A high-powered combination saw and woodworker is set up in the center of the development. Adjoining it is a band saw. Practically all the lumber that goes into the Arlmont houses is cut on these saws.

Two men and two helpers can cut all of the lumber for one house in a single day. The pieces are then loaded on a truck and delivered to the house where the various

"Mass Production" Technique Makes Use of Progress Chart, Full Detailing of Framing Members, Advance Cutting of All Parts with Power Saw. Crews Specialize in Each Operation in Building Houses.



W. W. Rausch, president of Arlmont Corp., on the job.

operations are handled by specially trained crews. Each crew, made up of two carpenters and a helper, specializes in a certain type of work and becomes expert in this work. These special operations include form work, floor timbers, placing studs, placing roof rafters, boarding, doors and windows, exterior trim, shingling, etc.

Before the lumber can be cut on the power saw it is obviously necessary for the builder to detail and schedule all of the pieces required. Here the experience of Rausch in large-scale construction work shows. In addition to the regular blue prints of each house prepared by the architects, a special set of framing details is made up which describes the members required. A code is used to describe each member. A typical roof framing plan is shown in Chart No. 2, page 44.

To get down on paper the exact number of pieces of lumber required, they are all listed on typewritten sheets

By J. B. MASON

STEAM shovels, tractors, trucks and power equipment are an important factor in the Arlmont construction program. 35 houses were under construction when this picture was taken in December, with the thermometer below zero. The work went ahead in spite of New England winter.



New 425-Home Boston Development



LARGE SHEETS of plywood are used in building concrete forms. These are used over and over and greatly reduce cost of form work. High quality, 2,000-lb. concrete is achieved by water-cement ratio.

which give the code number, size, number required and the size piece from which it is to be cut. A typical sheet of this type is shown in Chart No. 3, page 44.

To make the planning thoroughly complete, large-scale detail drawings of individual framing members are made up as shown in Chart 4, page 44. These details are similar to those used in detailing structural steel on large jobs. The details are drawn to a scale of 1 inch to the foot and give the exact cut required, the exact size and the code number.

With the above information the power saw operator can turn out fast and efficient work. The members are accurately cut and are thus easily and quickly assembled. Because of the way in which the carpenters specialize in various jobs they work faster, get more done and do a better job.

An important feature of the advance planning and

detailed of the jobs as performed by Rausch and his organization is that waste movements and waste of materials are greatly reduced. Every scrap of lumber is put to work. Any leftovers are cut up for bracing, bridging or blocking. The writer inspected a pile of sawdust and waste which had accumulated from the first 35 houses built. This pile could easily have been stowed away in a yard-square packing box.

Another advantage of the careful advance detailing of the houses is the elimination of cutting of members by the plumbing and heating trades. The carpenters know exactly where the soil pipes are run and headers are put in so that no later cutting is involved. This is also true for the warm-air ducts. The builders of Arlmont houses have amply demonstrated the old adage "it costs less to make your changes on paper."

Quality Details

There is a slogan "it takes a big man to do little things well" that applies to Rausch and his associates in Arlmont. These are small houses but painstaking effort is taken to see that the important things, both large and small, that make for a tight, structurally sound and permanent home are done. Here are a few things that builder Rausch pointed out in his houses that are frequently neglected or done otherwise:

A "window gasket" of 90-lb. roofing. Plaster is brought up tight against window frame.

16-oz. copper flashing above windows, doors, around dormers, at chimney and other spots frequently neglected in low cost houses.

Lead flashing on the cornice returns.

Floor beams rest on steel lally columns—do not touch chimney. 2-in. furring strips nailed on ceiling joists.

Best type braced frame construction with corners thoroughly braced and all structural members carefully figured for stress and load.

Complete firestopping with bricks set in mortar at floor lines and around partitions and stair openings.

Rausch believes in the value of well-known quality products and has secured the cooperation of a large num-

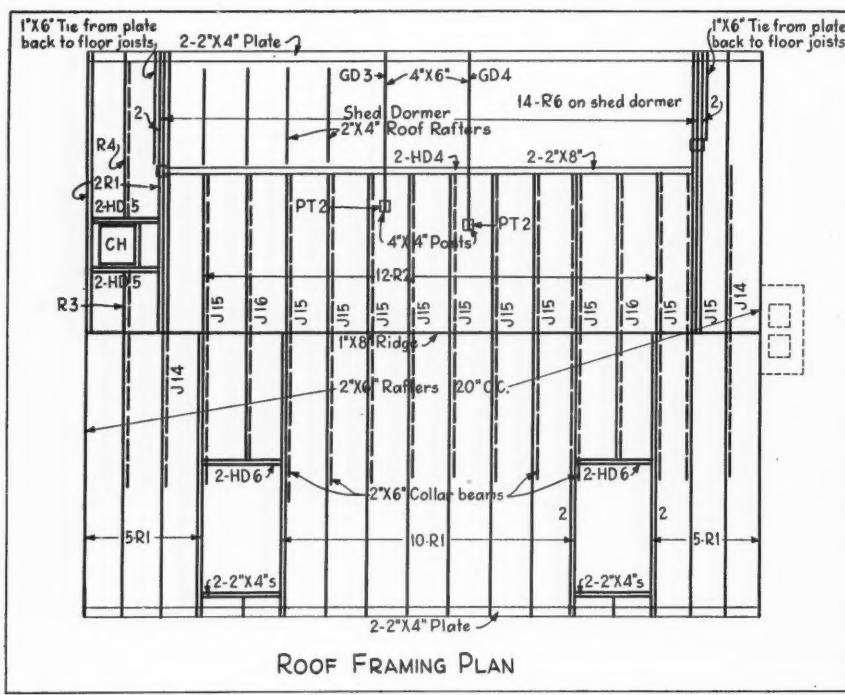


CHART 2—Typical roof framing plan showing how Arlmont Corp. indicates number and type of framing members. These are then detailed for cutting on power saw, as shown on charts below.

Every Framing Member Detailed in Advance Like Structural Steel. All Cutting Done on Power Saw Set Up on Job. Two Carpenters and Two Helpers Saw Entire House in One Day.

ber of manufacturers in his advertising. He pointed out that estimates were made as to the amount of money that could be saved by skimping and using cheaper brands of materials. The figures showed that the most that could be saved would be about \$700. It was decided therefore to use the best. There is no doubt in Rausch's mind that the public is willing to pay \$700 more to have the best of everything and to have quality workmanship and construction. The houses are fully insulated and have winter air-conditioning systems. Included in the products and equipment used are the following:

LUMBER—Weyerhaeuser 4-square, first quality lumber for framing, wide and well matched airtight boarding; Red Cedar shingles; select plain white oak flooring. Curtis & Pope are the local lumber dealer representatives.

INSULATION—Double-thick Balsam Wool between roof rafters. Wood Conversion Co. Nu Wood insulating board on side walls.

HEATING—Perfection Stove Co. Superfex oil-burning air conditioning and heating system (oil burners in this unit can be operated without electricity and were used to provide temporary heat during winter construction).

ROOFING—Extra heavy asphalt slate shingles with 10-year guarantee by Keystone Roofing Co. Building paper, Sisalkraft waterproof building paper.

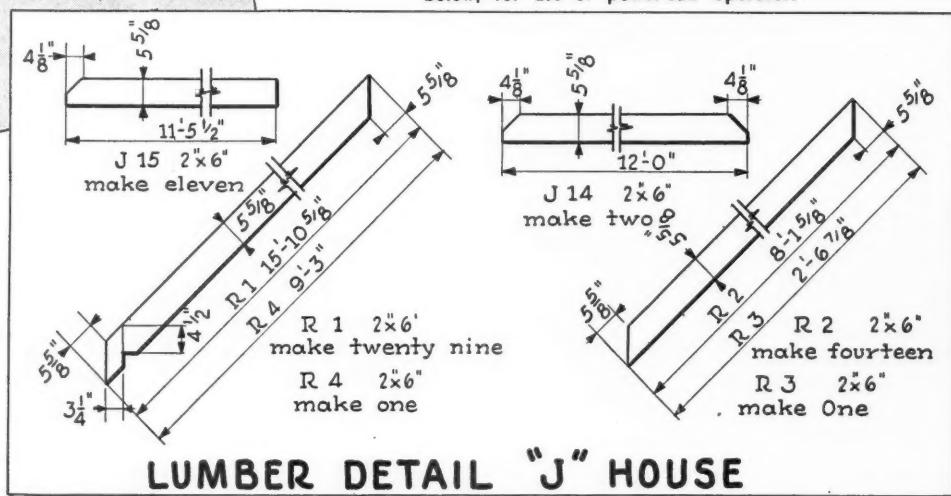
PAINT—3 coats Sherwin-Williams first quality paint on all exteriors and 3 coats semi-luster enamel on interiors.

GAS RANGES—Fully-insulated table top Glenwood ranges with automatic lighters, thermostatic control, large oven and broiler.

CABINETS AND MILLWORK—Morgan kitchen cabinets, Morgan 6-panel Colonial doors and Colonial entrance way. Interior trim and Colonial mantels Ponderosa pine.

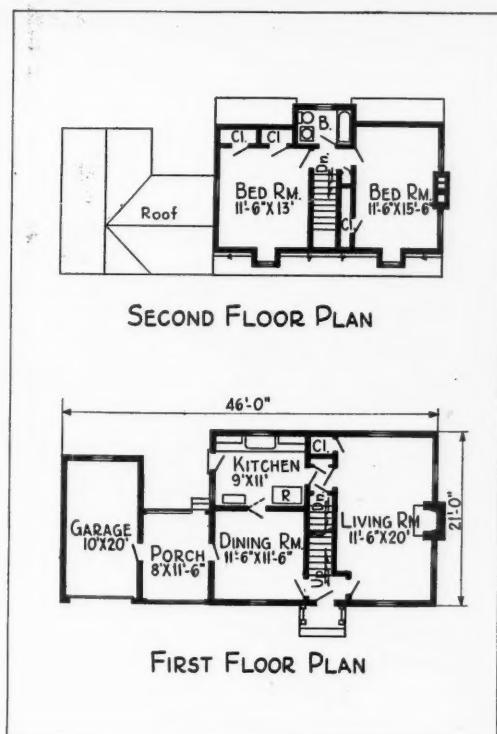
(Continued to page 116)

CHART 4—Framing members are detailed to 1-in. scale, as shown below, for use of power-saw operator.





ARLMONT VILLAGE houses feature attractive, New England Colonial architecture. The house above has an open porch or "breezeway" connecting with garage. Living room and kitchen, below, are modern and cheerful. Interior trim is simple, light in color.



FLOOR PLAN of the Arlmont Model Home, above, is compact, inexpensive. The attached garage adds to the size and appearance of the house.

Insulated, Air Conditioned Homes of Good Colonial Design Prove Popular in Arlmont, New Boston Home Development. Price Range is from \$6300 to \$6850, on Large Plots



Magic Touch Improves Building

IN San Francisco there is a distinct trend toward remodeling older but well-built buildings so that they may continue to attract such tenants as will bring in a steady and profitable revenue. There is little land left in the city by the Golden Gate upon which to build in the downtown area. This makes it a choice between wrecking a building before new construction can begin or remodeling the old.

Such was the situation with the four-story apartment house, owned by Howard McGurrin, which occupies a prominent gore corner, 151 feet on Market street and 183 feet on Fourteenth street. The building, although finished in 1906 just two weeks before the San Francisco Fire, was well built in the first place and has been well kept up. It is in a location which has improved in value as the years advanced. The problem was to make it as up-to-date in appearance as some of its newer neighbors.

After consultation with the contractor, J. S. Malloch, it was decided to stucco the building and bring it up-to-date in lines. Often when old buildings are stuccoed the original lines of the building are followed and the full benefit of the remodeling is not obtained. Since cornices and broken lines are not used in the modern, streamline building, their removal thus affects the metamorphosis which is desired.

The belt courses which ran around the building between the third and fourth floors and the overhanging cornices were removed on this apartment house so that the building would present the straight streamlines which are so popular today.

To modernize the bay windows mouldings were used on the corners extending the length of the three top floors, thus giving one continuous line. This also has the effect of increasing the height of the building. An ornamental band of plaster was used at the top of the build-

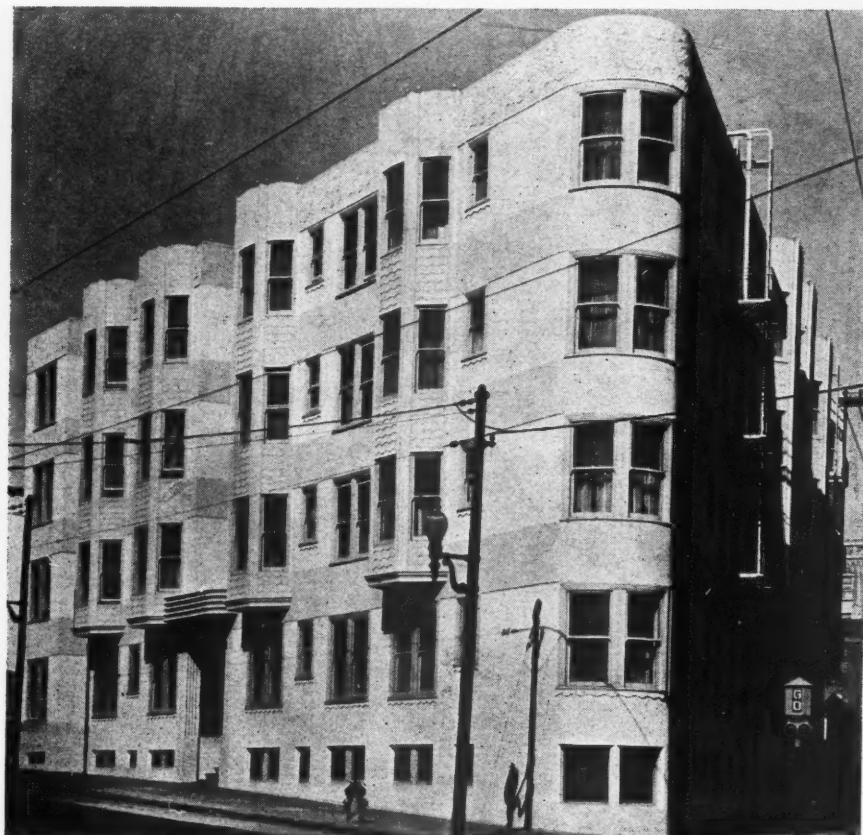
ing with harmonious decoration below the bay windows. These three circling bands gave the building width.

The entrance to the building was changed in harmony with the new lines and a narrow, overhanging cornice of plaster was built out a few feet over the street.

Treated in this manner the completed job has brought much favorable comment. It has helped to improve the appearance of the neighborhood, besides increasing the value of the property, itself.—GRACE K. ANDERSON.

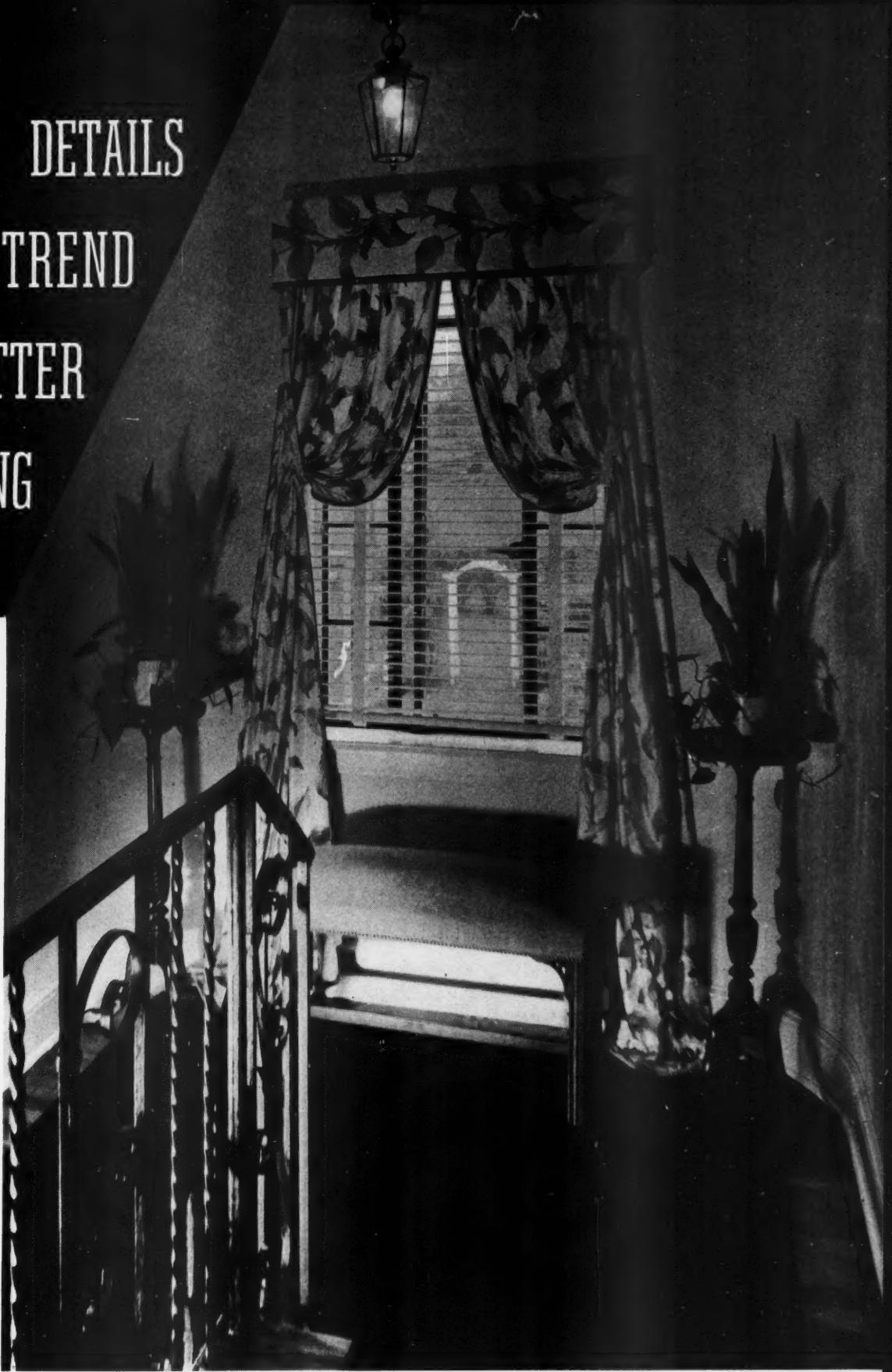


ABOVE—Built in 1906 on Market Street, San Francisco, this old timer had to be re-styled or torn down; it was modernized.



CONTRACTOR J. S. Malloch produced this good looking apartment building by clearing off cornices and finishing the exterior with stucco and paint.

MODEL DETAILS SHOW TREND TO BETTER BUILDING



HALLWAY detail of model home built in Evanston, Ill., by C. A. Hemphill & Associates. Stair railing, curved hall end and attractive lighting fixture are typical of fine detailing throughout; other views and plans shown on next two pages.

MODEL features as now being shown in the better type demonstration home and the following Design Section are finding ready acceptance with today's home buyers

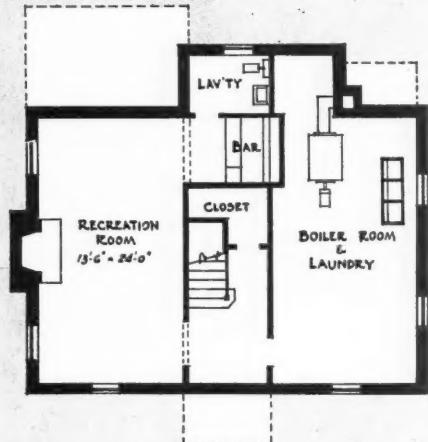


EVANSTON MODEL HOME

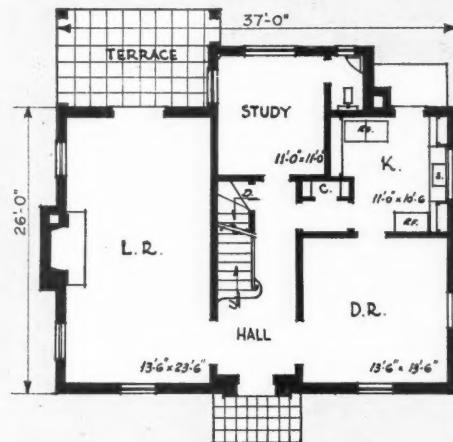
**Designed and Built by C. A. Hemphill
& Associates, Evanston, Ill.
Raymond F. Houlihan, Architect
W. G. Ruggles & Co., Sponsor**

Cost Key is 1.816—136—1042—44—23—17

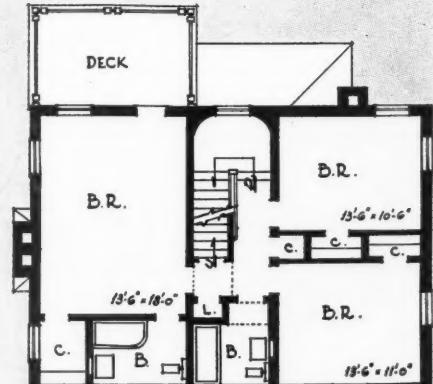
IN PRESENTING this model home for public inspection, the aim of the sponsors was to demonstrate to the residents of Evanston, Chicago North Shore suburb, that there have been many advances in home design, materials and construction during recent years and that the cost of a well built home has not advanced to the high level anticipated for the future. Economy of construction without cheapening, pleasing architectural design and practical floor plan are well demonstrated. The response was most gratifying—50,000 people visited the house in the four weeks it was open, 4,000 in a single afternoon and evening; it was sold shortly afterwards.



BASEMENT PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

OUTLINE SPECIFICATIONS

FOUNDATIONS—Poured concrete walls on 24" concrete footings.

SEWER WORK—Drain tile around footings; extra heavy lead water service.

BASEMENT AND GARAGE FLOORS—4" concrete on cinder base.

STRUCTURAL STEEL—Carnegie heavy section "I" beams and lally columns.

FIRST FLOOR—Jones and Laughlin steel beams, reinforced concrete sub-floor.

EXTERIOR—Walls of select common brick veneer on frame studdings and sheathing; Bondex brick paint.

LUMBER—No. 1 Southern yellow pine; exterior lumber cypress.

INSULATION—Silvercote reflective type on walls and second floor ceilings.

ROOF—Clear, straight grained red cedar shingles, creosote stained.

SHEET METAL—Gutters and downspouts of Armco galvanized iron.

WINDOWS—Fenestra casements with copper screens.

FINISHED FLOORING—Clear red oak flooring laid over subfloors with deadening felt beneath.

MILLWORK—All casework, doors and window stools of birch. Paneling in basement and den knotty white pine.

LATH AND PLASTER—U. S. G. rock lath with all angles and corners reinforced, metal lath on living room and dining room ceilings, 3-coat plaster.

HEATING—Sunbeam conditioned-air furnace with gas burning unit.

PLUMBING—Kohler plumbing fixtures.

GLAZING—L-O-F "A" quality glass with special steel sash putty.

STAIR RAILING—Hand made ornamental iron stair railings for main stair and basement stair.

LINOLEUM—Armstrong's marbleized.

RECREATION ROOM FLOOR—Asphalt tile laid in waterproof mastic.

MEDICINE CASES—Lawson Venetian mirrors on baked enamel steel frames.

HARDWARE—Sargent cast brass hardware with dull chrome finish.

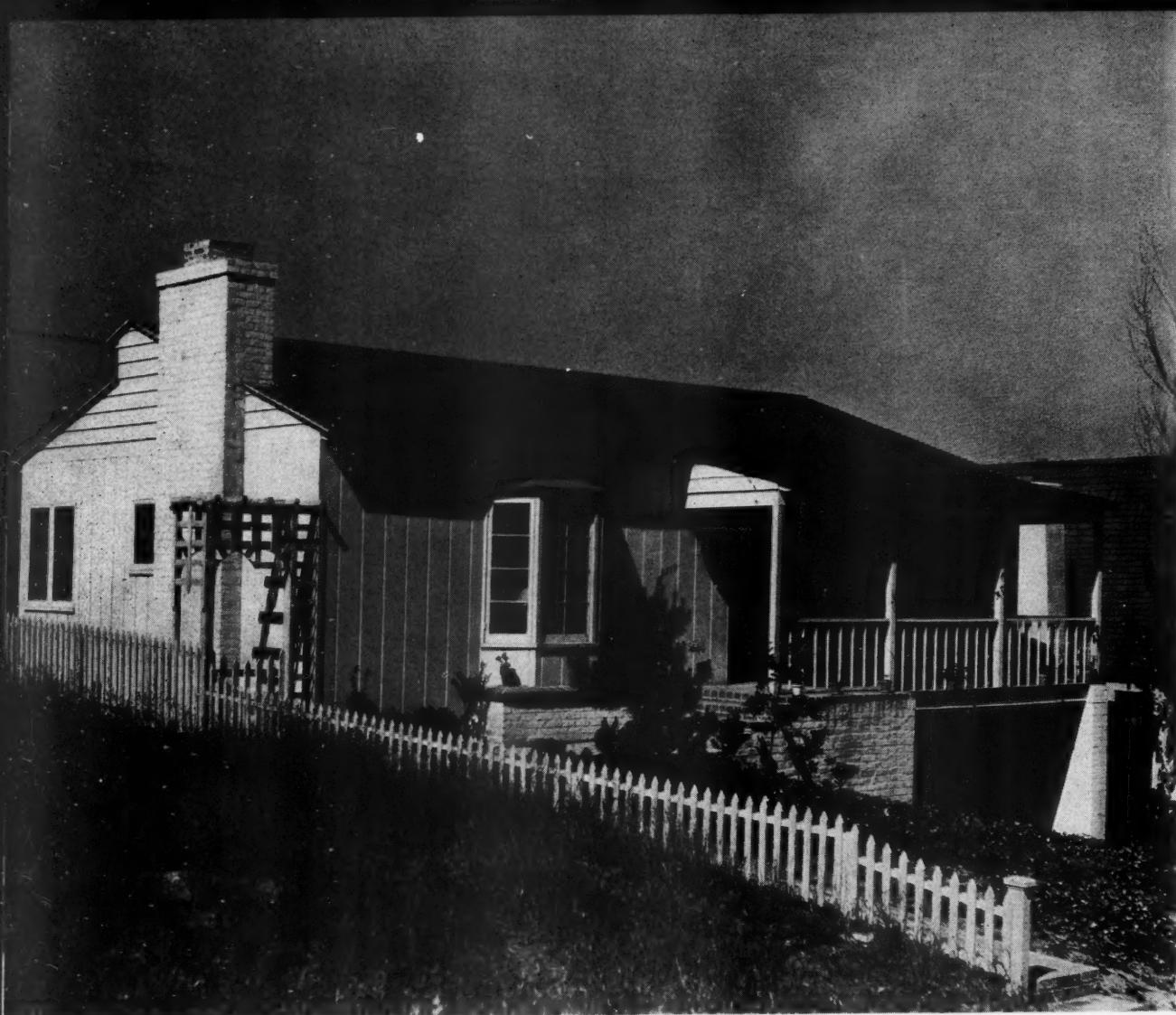
LIGHT FIXTURES—Lightolier latest designs in metal and crystal.



RIGHT, top to bottom: Basement recreation room of Evanston Model Home is finished with knotty pine as paneling on the walls and as casing around the steel beams which support the concrete first floor slab. Large brick faced wood-burning fireplace and colored asphalt composition tile floor add to the attractiveness of the room.

Living room features an ornamental wooden mantel with marble facing and hearth, finely detailed cornice mould and bookcases and cupboards built into arched recesses flanking the end window.

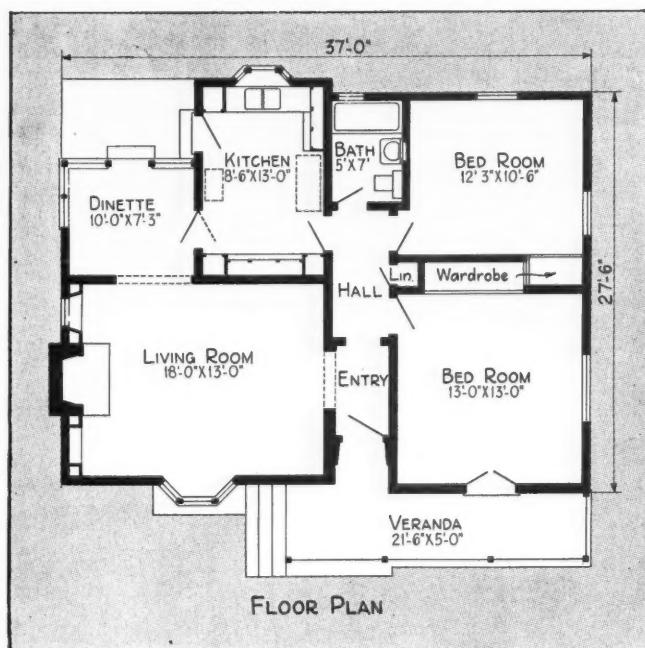
Modern kitchen has tiled wainscoting, reversible ventilating fan and compact cupboard arrangement around the sink.



CALIFORNIA HOME OF REDWOOD

Located at Westwood Hills

Frank W. Green, Los Angeles, Architect



Cost Key is 1.189—129—976—41—14—13

ACCOMPANYING photographs show the possibilities of designing a two-bedroom house with ample living facilities at moderate cost. An unusual feature is that the laundry and garage are built-in beneath one side of the house. A sloping lot makes this possible. The exterior walls of this frame structure are of vertical redwood sheathing painted white, with porch of whitewashed brick. The foundation is concrete. The roof is of No. 1 cedar shingles with creosote stain. The bedrooms are so arranged that there is wardrobe space between. The interior trim throughout is pine with enamel finish. Floors are of Philippine mahogany planking in all rooms except kitchen and bathroom which are tiled.



STUDIO LIVING ROOM IN CALIFORNIA HOME

KNOTTY Pine paneling with built-in book shelves helps to make the fireplace end of this big living room the most dramatic fixture of this house at Westwood Hills, California. Other side walls are plastered. Extra height is gained by going up to the rafters for a beamed ceiling effect. The floor is plank-style Philippine mahogany.



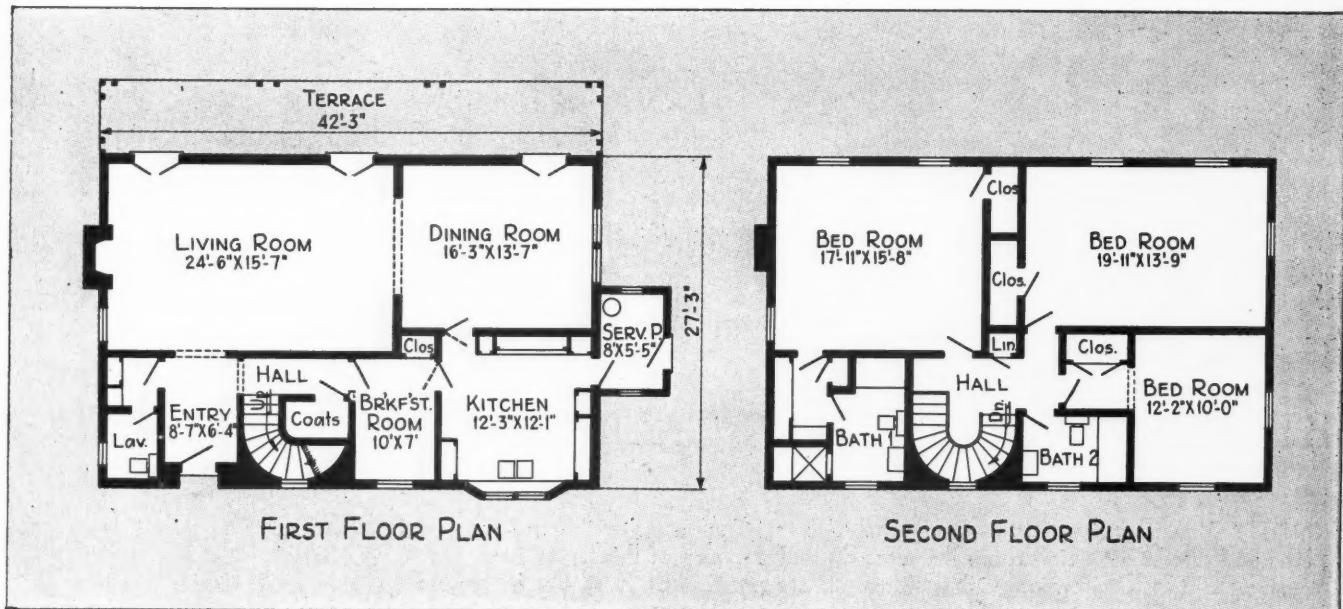
WESTERN HOME OF FRENCH STYLE

Built in Rossmoyne Village, Glendale, Calif.

Merrill W. Baird, Supervising Architect

Rossmoyne Properties, Inc., Contractor

Cost Key is 2.133—150—1194—50—26—19





ABOVE: Living room and, LEFT: bedroom corner in Ross-moyne Village, model home designed by Merrill W. Baird. The wallpaper, fireplace treatment and furnishings suggest 18th Century English style in interior arrangement, finish and furnishings. This is a definite trend in homebuilding and furnishing of California homes today. Barker Bros., Los Angeles, were the decorators and furnishers of this home.



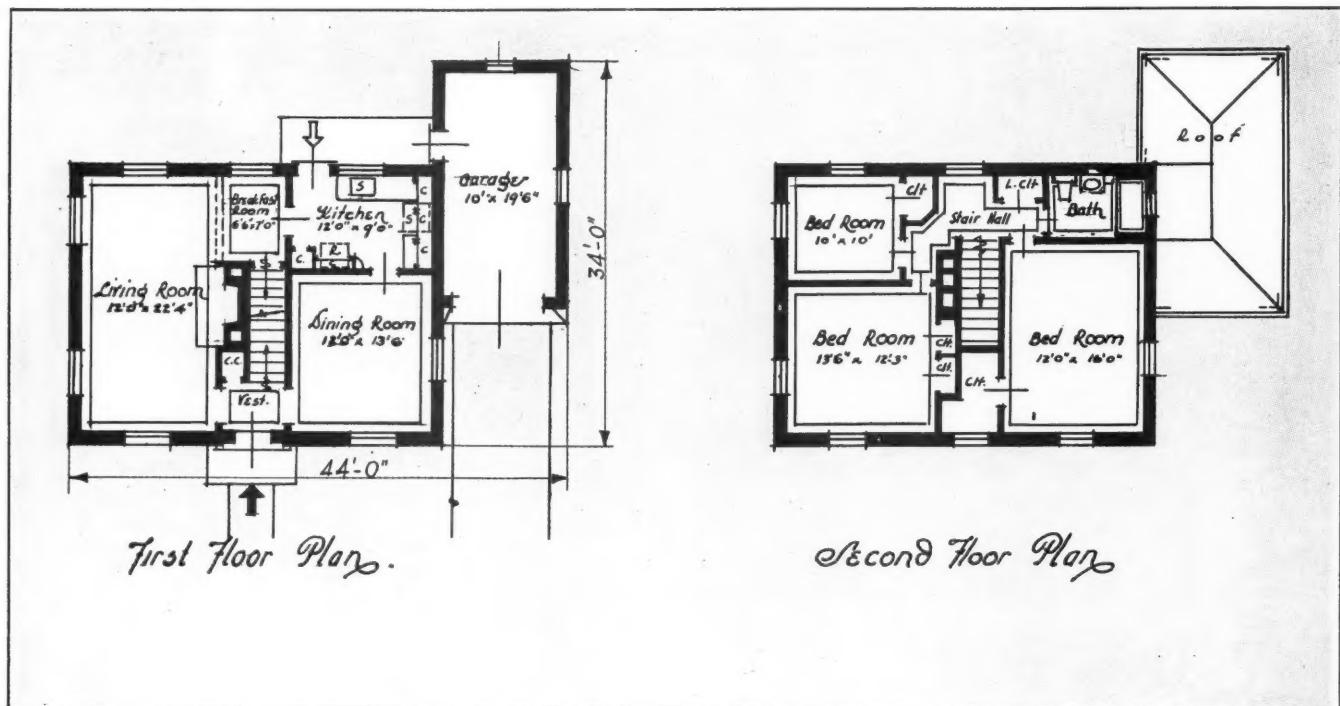


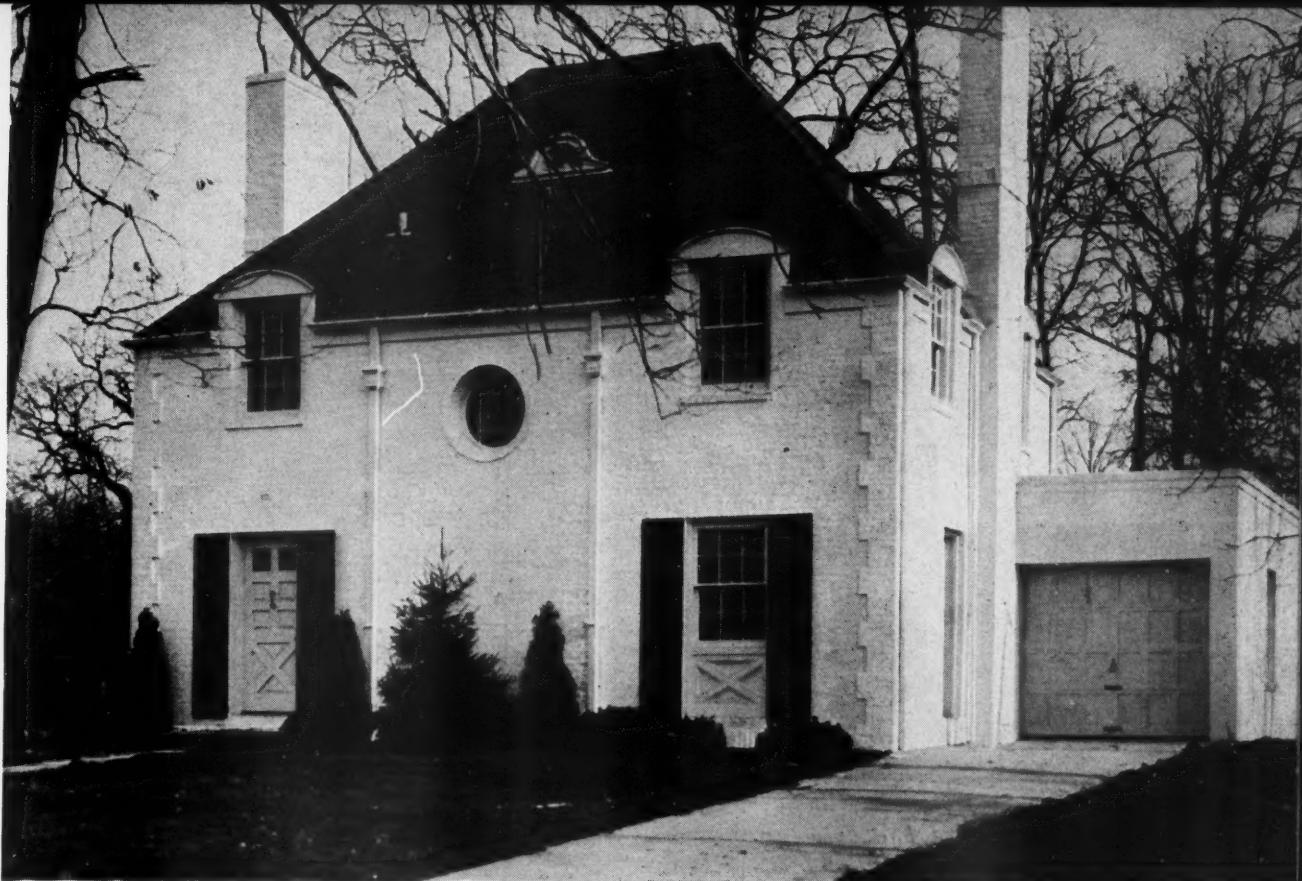
WELL PLANNED; BUILT FOR SALE; GEORGIAN AND P

THE TWO HOMES on this and opposite page were designed and built for sale by W. C. Tackett, Inc., a Chicago firm doing both operative and contract residential building in several of the city's suburbs. The designs were developed for the medium price class and represent good current

practice in this field. The English design above is attractive in exterior appearance; the plan is compact and includes a basement recreation room, breakfast alcove off living room and attached garage.

Cost Key is 1.672—156—816—36—26—13.





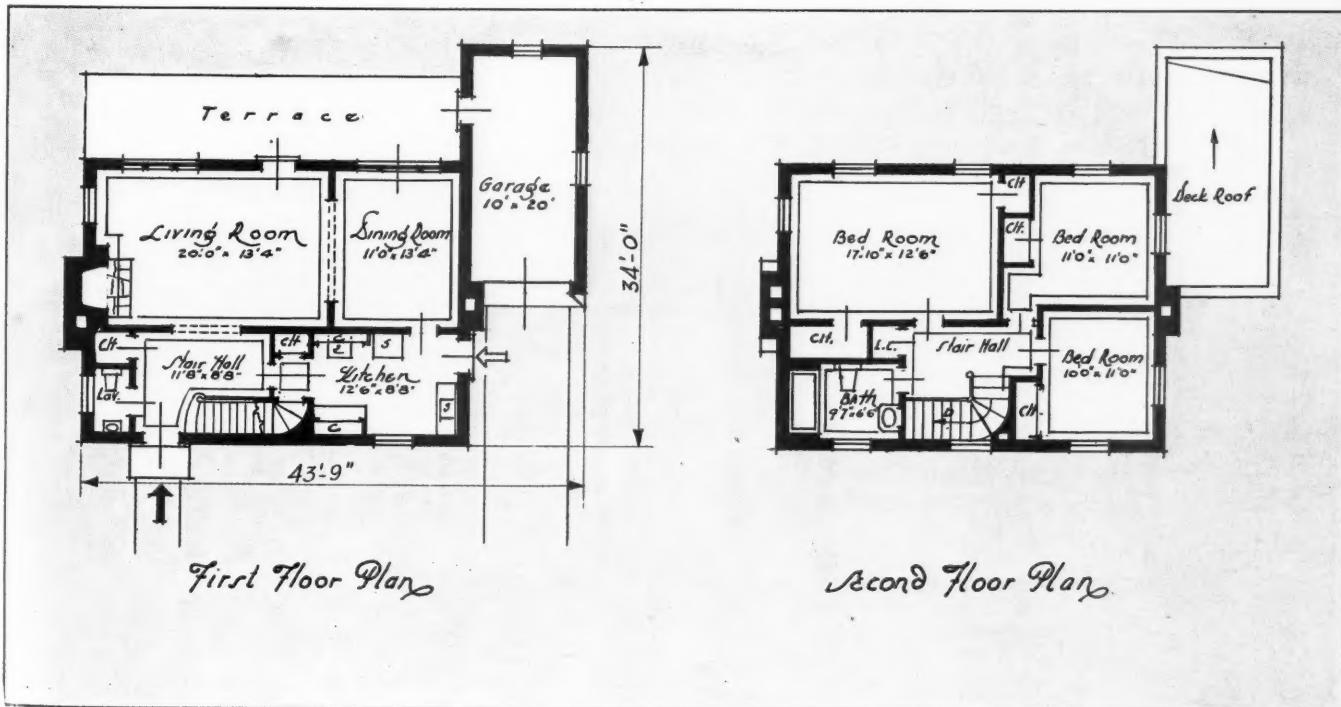
ND PROVINCIAL IN STYLE

**W. C. Tackett, Inc., Chicago, Designer and
Builder—Location, La Grange Park, Ill.**

Cost Key is 1.743—156—816—36—23—16.

ALTHOUGH the floor area is approximately the same as that of the house opposite, the plan used in this French style design is arranged with the important rooms to the rear to take advantage of the wooded site. Kitchen, halls, bath and lavatory are economically grouped at the front.

Both houses feature Sunbeam gas-fired winter conditioning, U.S.G. rock wool insulation, Allmetal weatherstrip, latest kitchen equipment, tile baths, fireplaces in living and recreation rooms, McKee upward-acting garage doors, L-O-F double strength glass, Armstrong linoleum in kitchen, and Certain-teed Seal-Tab shingles.





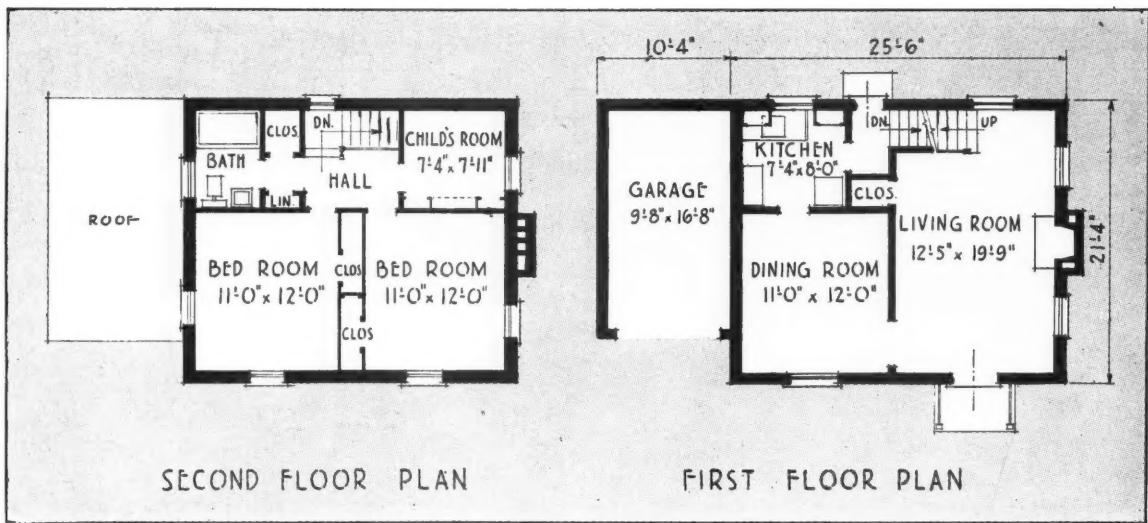
CONCRETE MASONRY HOME

at Jenkintown, Pennsylvania

Robert C. Martin, Architect

A. E. Heckman, Contractor

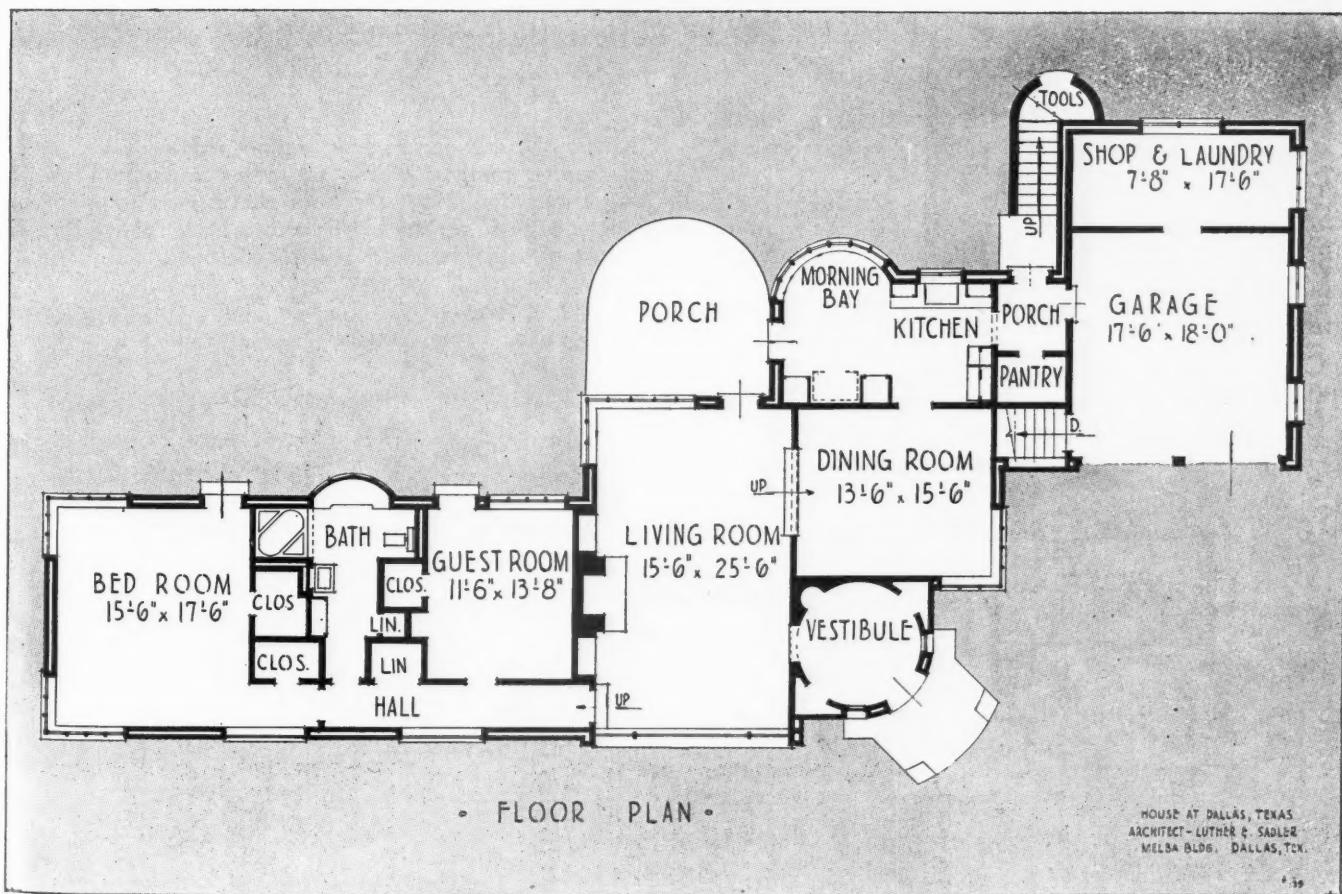
Cost Key is 1.266—114—543—24—19—10

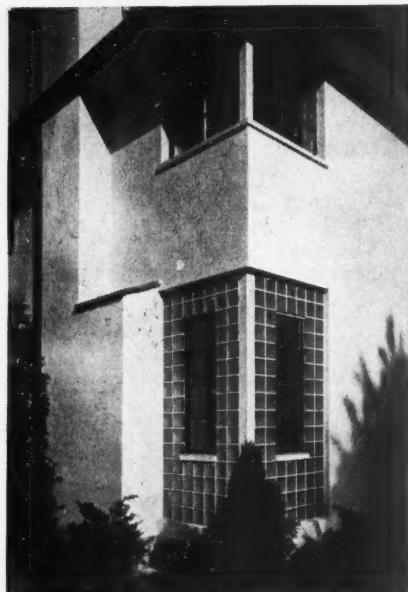




FAR-FLUNG MODERNISM

Rambling House of Concrete Masonry at Dallas, Texas
Luther E. Sadler, Architect and Builder





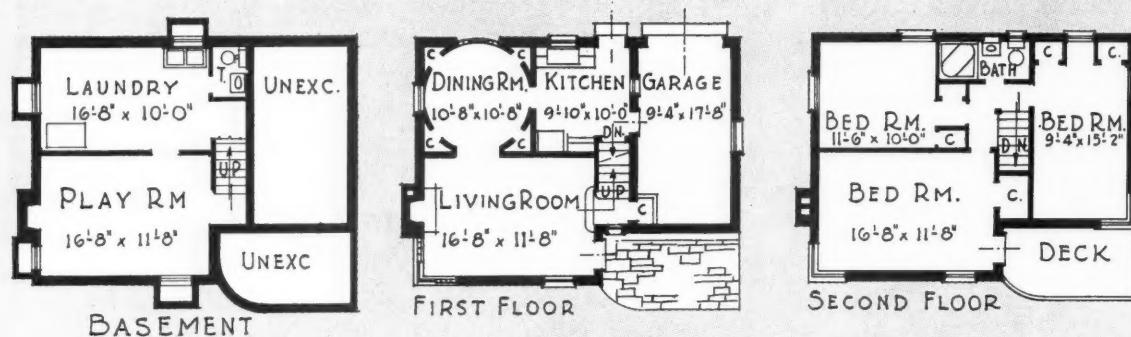
6-ROOM CONCRETE HOUSE CIRCULAR DINING ROOM

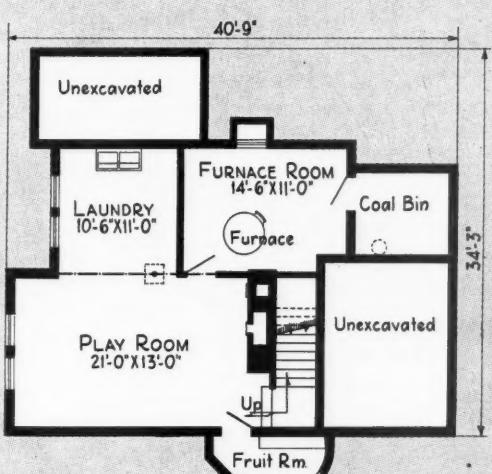
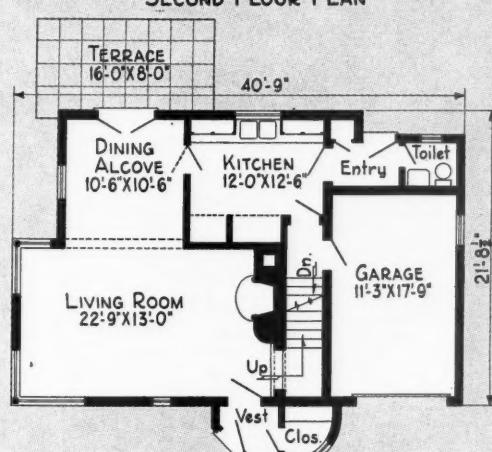
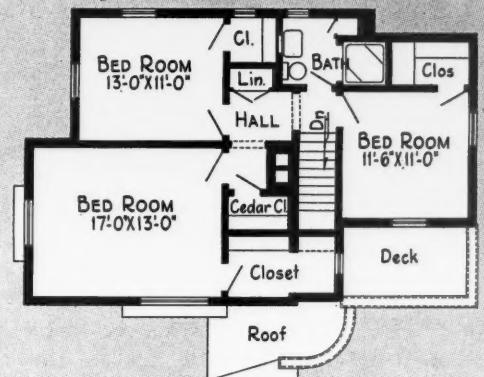
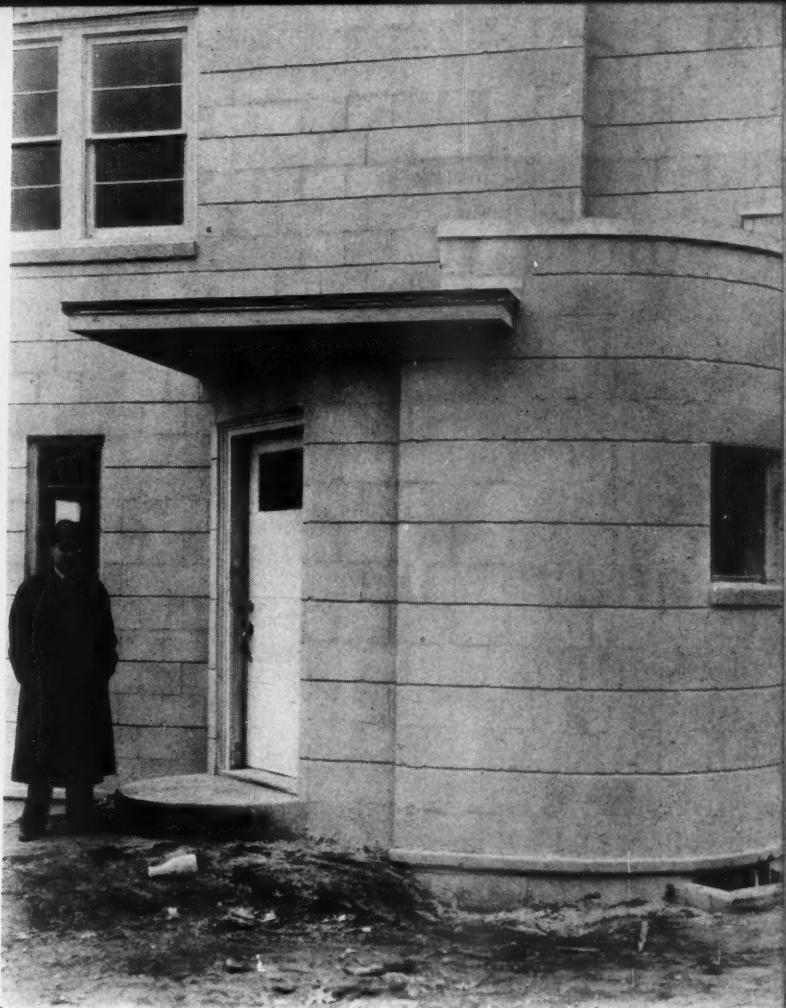
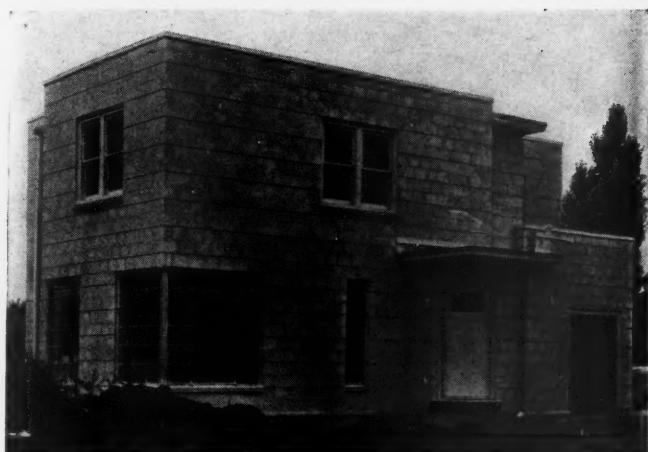
W. H. Buffett, Designer and Builder

GLASS BRICK, modern concrete construction and a likable, livable plan are outstanding features of this recently completed house located in West Englewood, N.J. The floor plan is very compact and economical. The deck above the front porch is an attractive feature. The house is built of concrete masonry with concrete floors and joists.

Cost Key is 1,506-112-700-30-20-12.

CORNER of living room showing steel casements set in glass brick.

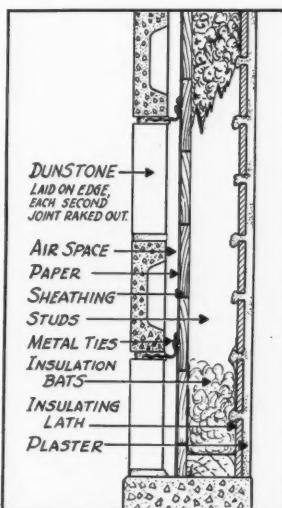




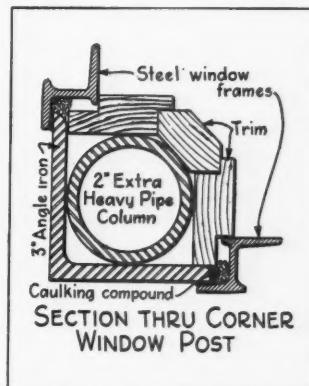
CONCRETE UNITS VENEER MODERN HOUSE

Harry L. Colton, Architect
Bolhuis Builders, Inc., Contractor
Both of Grand Rapids, Mich.

Cost Key is 1.704—136—687—31—26—9



LEFT: Wall section showing concrete block veneer. Below: Load-bearing corner window post section.





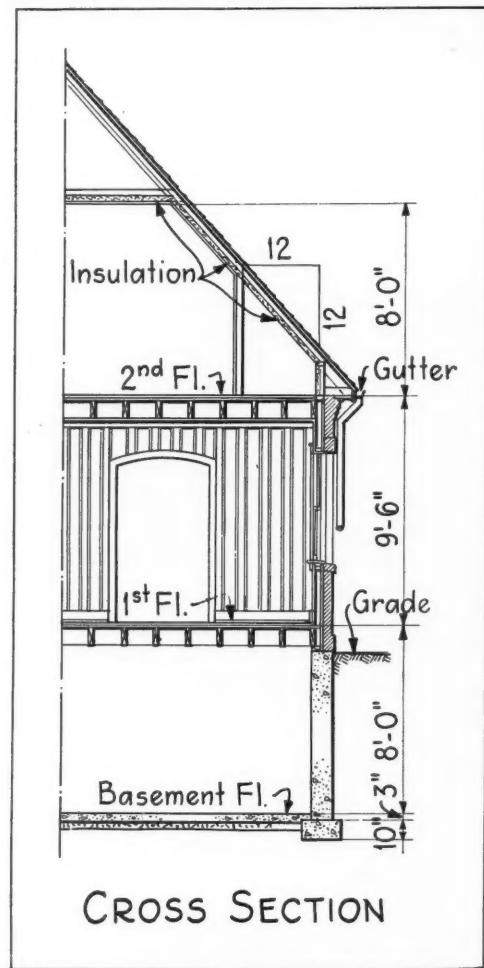
6-ROOM ENGLISH HOME

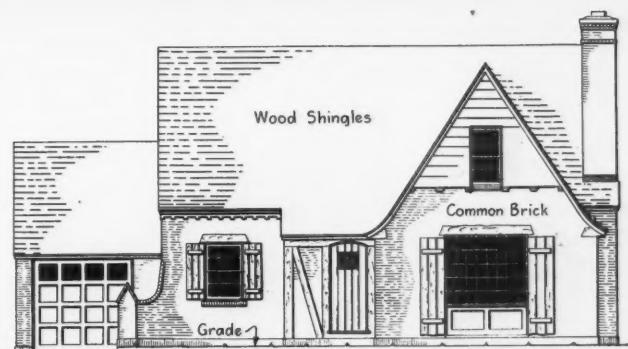
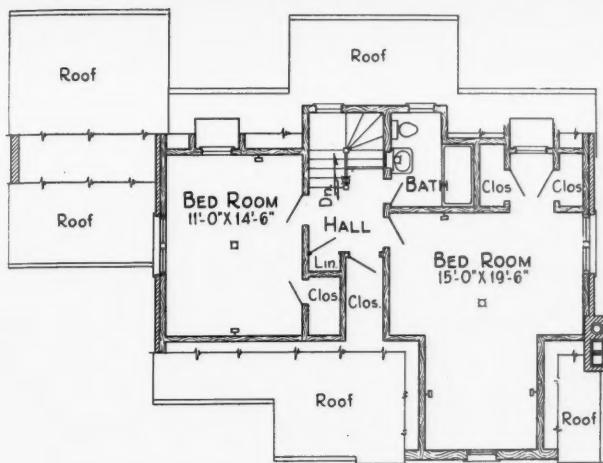
Built in Edgebrook, Chicago
Everett L. Kennedy, Wilmette, Ill.
Designer and Builder

THE HOME illustrated on these pages was chosen as the February House of the Month because it combines so many of the qualities desired in a small house—attractive exterior, good room arrangement, economy of plan, proper relation to site, modern livability, and sound building practice in materials and construction. The charming exterior design is a conservative adaptation of English style which is now rated as second only to the Colonial styles in popularity; with six rooms and two baths, it fills the housing requirements of the average family in the moderate price class. Such features as attached garage, first floor bedroom and bath which can be used as maid's or guest room, recreation room with fireplace are included.

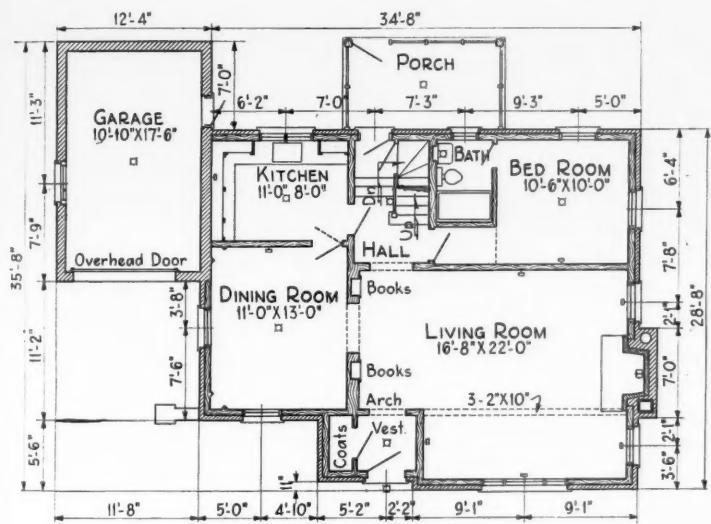
THE FLOOR PLANS on opposite page indicate the compactness of the layout and maximum space utilization. Living room is unusually large for this size house; lighted stairwell is located in rear with good access; storage space is ample, but first floor bedroom can have closet in place of tub. Notice that the upstairs bedrooms are symmetrical in shape. Elevations are well proportioned, details well handled. Common brick in buff shades, red cedar shingle roof and stained trim blend harmoniously. Walls are insulated with Balsam-Wool and finished with 3-coat plaster on U.S.G. Rocklath. Standard fixtures throughout; winter conditioning with Juneaire gas-fired unit; Armstrong linoleum on kitchen floor; Pacific Breeze ventilating fan.

Cost Key is 1.800—166—930—41—22—18.

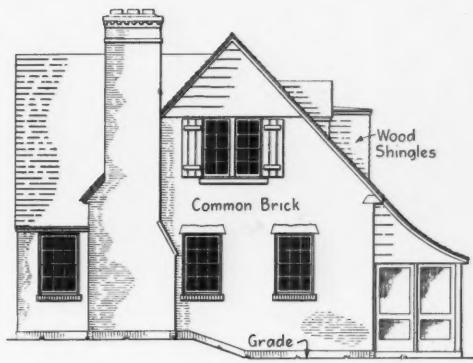




FRONT ELEVATION



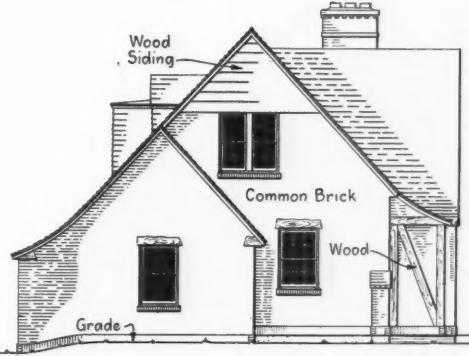
FIRST FLOOR PLAN



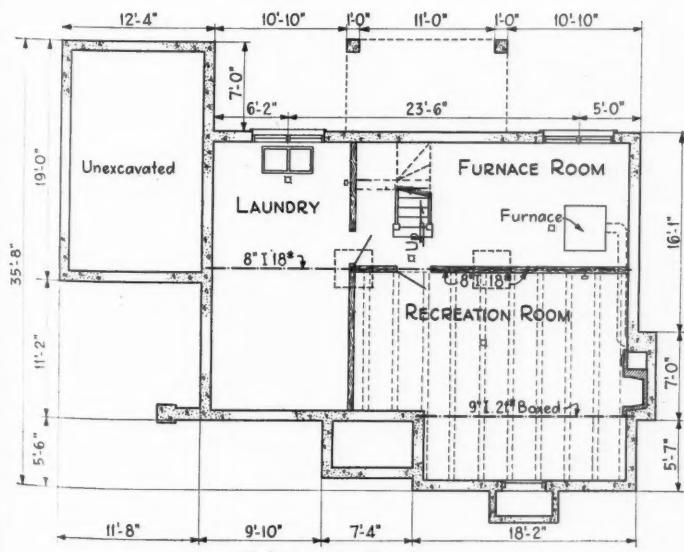
RIGHT ELEVATION

0 5 10 15 20

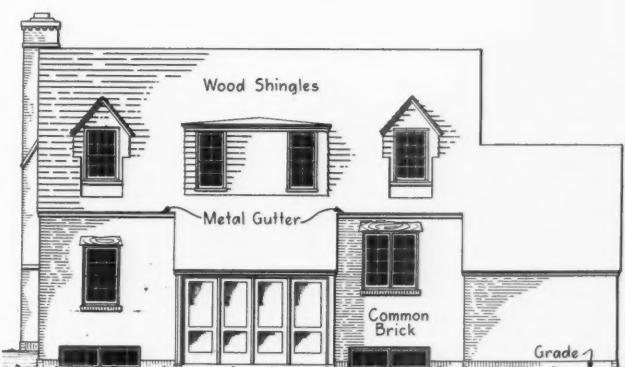
SCALE IN FEET



LEFT ELEVATION



BASEMENT PLAN



REAR ELEVATION



THIS unusual model home is labeled "The Home of 1936" and is located on the Steel Pier at Atlantic City, where it has been visited by literally hundreds of thousands of people. It is more a museum of building products and equipment than a home, but nevertheless the architect included many attention-getting ideas that have proved of interest to the industry.

ATLANTIC CITY STEEL PIER MODEL HOME

Wm. F. B. Koelle, Architect
Carl A. Johnson, Builder



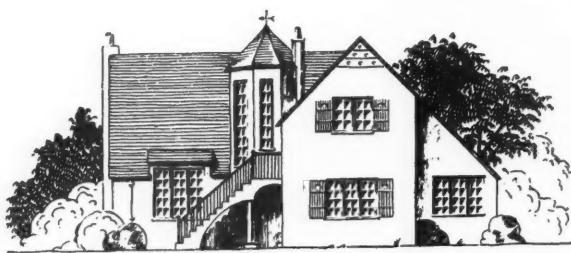
SIDE ELEVATION



FRONT ELEVATION



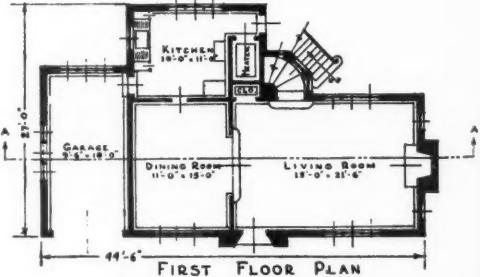
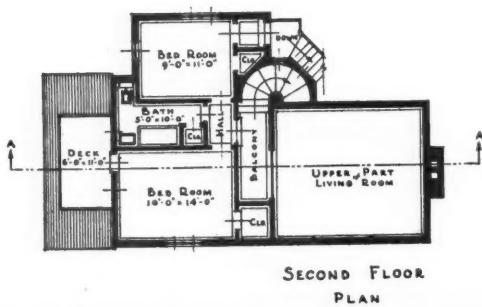
SIDE ELEVATION



REAR ELEVATION



SECTION A-A



DRAWINGS, at right, show architect's original conception of the Steel-Pier model home, with a variety of exciting features, such as a tower, circular stairway, recessed porch, raised dining room, studio living room, balconies and outside stairway.

Plan For a Modern Basement

Coal Stokers Help Builders Meet New Demand for Automatic Heat. Dustless Coal and Efficient Bins Help Sales

By LYMAN M. FORBES

HOME owners want the comfort, conveniences and health-giving uniformity of automatic heat. They want clean, efficient automatic heating equipment, whether they can afford it or not, because it will enable them to have an additional basement room, or to utilize space that would otherwise be wasted. Because of this unprecedented demand, the building industry is witnessing the "battle of a century" between manufacturers of coal stokers, oil burners, and gas burners, aided by producers and distributors of coal, gas, and fuel oil. The scene of battle is in the basements of new homes. Contractor-builders will decide the ultimate outcome of this three-sided struggle by their purchases of equipment for speculative houses, and because of their buying influence with prospective owners and clients for whom they build on contract.

Operative builders will select the heating plants for approximately 45 per cent of the new homes. Contract builders, who will account for another 30 per cent of new homes, will buy heating plants for at least half of their clients, and will strongly influence selections made by the remaining owners.

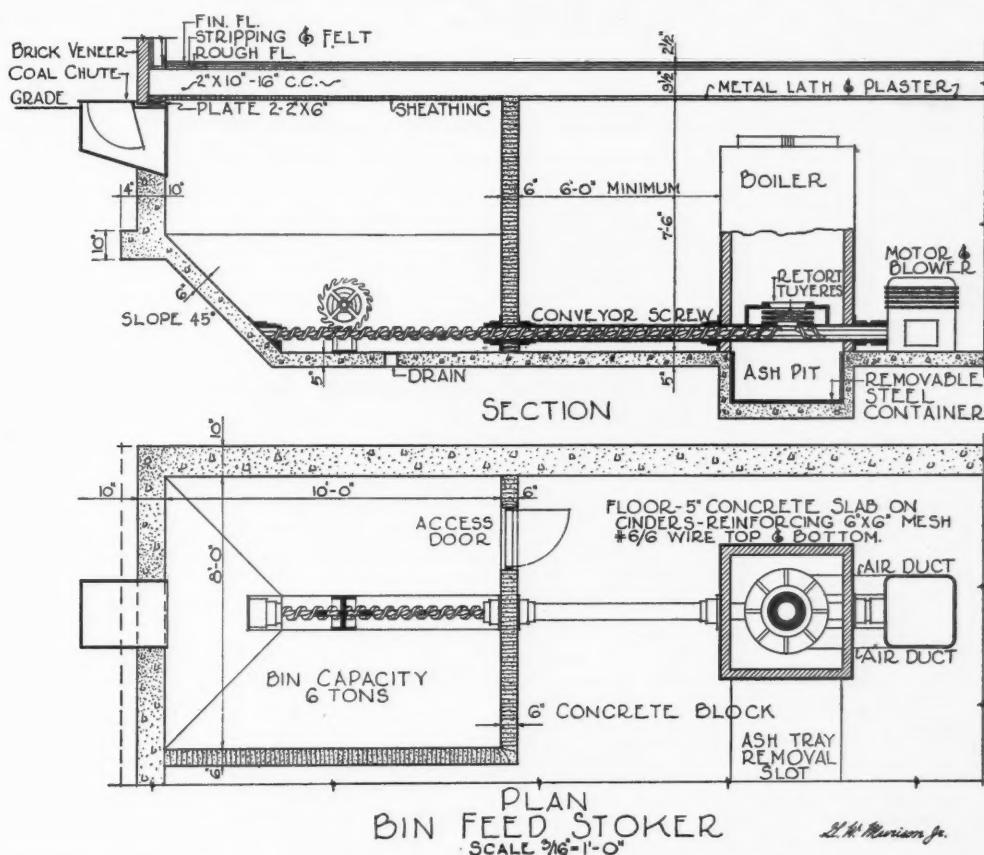
The most successful contractor-builders will be those who can discuss the merits and advantages of each type of heating equipment, preferably from experience based on installations they have made. One purpose of this department is to present and describe in detail all types of modern heating units, and to provide a background of information that readers can pass on to clients. This installment will be devoted to coal stokers and modern ways of handling solid fuels.

Coal stokers, like automobiles, went through a trying period of development, which was retarded by too frequent mechanical failures, and by installations in obsolete boilers and furnaces that

did not permit the machines to operate at natural efficiency. These faults have been eliminated, and manufacturers today devote their attention to producing units attractively finished in colors, that operate so cleanly and so quietly that they can be used with modern furnaces and boilers in comfortable basement recreation rooms of homes.

Stoker sales have increased by leaps and bounds during the past few years, and reached an all-time high in October, 1936, when 18,319 units were sold (an increase of 82½ per cent over October, 1935). Sales for 1936 totaled about 100,000 machines of all types and sizes, of which more than 80 per cent were Class 1, or household stokers having a capacity of less than 100 lbs. coal feed an hour.

Stokers are made to burn either hard coal, or soft coal, but not both. Overfeed stokers drop fuel on to the fire from above. Underfeed stokers force fuel into the firebox from below. Practically all household stokers are of the underfeed type, and the great majority are designed to burn soft coal. Stokers operate equally well with warm air furnaces, hot water, steam, or vapor, and



CROSS-SECTION showing construction of dust-tight bin and bin-feed stoker. Slanting side walls deliver coal to feed mechanism. The coal flow pipe can be installed below the floor if desired.

COAL STOKER ROUND-UP

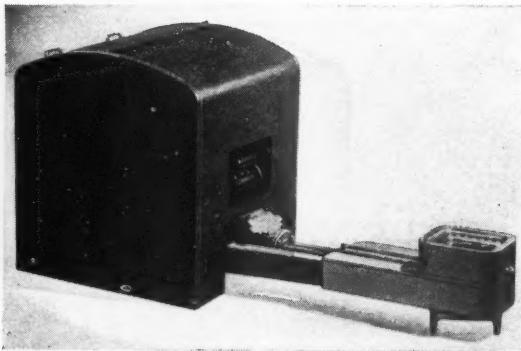
Presenting pictures, trade names, sources, and salient features of some leading residential coal stokers



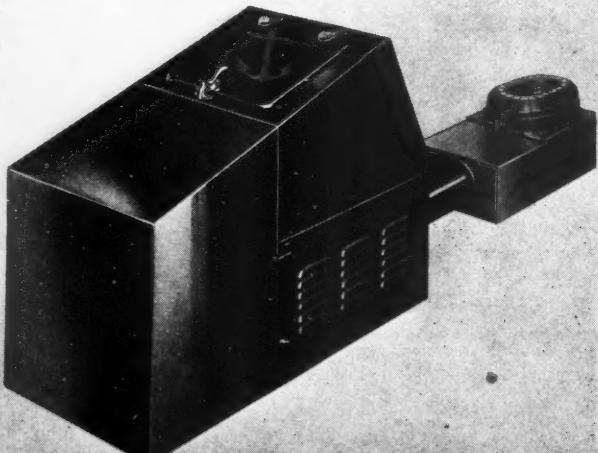
AN exclusive "masterstat" on this Whiting stoker, made by the Whiting Corporation, Harvey, Illinois, maintains a pilot fire and prevents wasteful overheating on mild days.



THIS Iron Fireman "Coal Flow" feeds fuel direct from bin to fire. Feed line may be installed below floor level. Made by Iron Fireman Manufacturing Co., Cleveland, Ohio, and Portland, Ore.



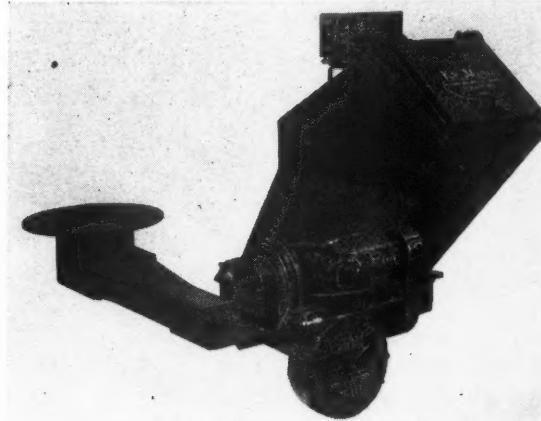
THE Norge domestic stoker, a comparative newcomer in the field, rounds out a line of oil burners and air conditioning units made by the Borg-Warner Corporation, Chicago and Detroit



LEFT: This Anchor Kol-stoker, made by the Anchor Stove and Range Co., Inc., New Albany, Ind., is designed for warm air furnaces. Another model is produced for use in a complete stoker-boiler unit.

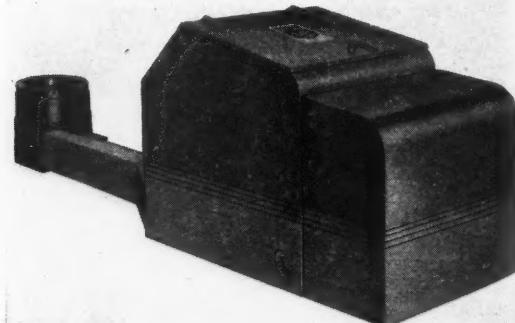


THE Fairbanks-Morse stoker, made by Fairbanks, Morse & Co., Chicago, includes a spike catcher, ring-type tuyeres, ball-bearing gear case, and exclusive "Air-trol"



PATENTED "dial control" automatically supplies the right amount of both air and coal in this Kol-Master stoker, made by Paragon Kol-Master Corporation, Oregon, Ill.

BELOW: The Econocol stoker, made by the Cotta Transmission Corporation, Rockford, Ill., is equipped with a double-capacity fan, air volume control, and motor cradled in rubber



are beginning to be used more extensively for domestic hot water heaters. The subject of indirect hot water heating, using stokers for hot water only in summer, as well as winter, will be discussed in more detail in a later issue. The advantages of forced-circulation hot water systems that employ small pipes will be adequately described. Stokers are fed either from a hopper that is filled by hand, or direct from a bin without manual handling of fuel.

The architectural rendering on page 63 was prepared especially for this issue by George W. Murison, Jr., of Chicago, former associate architect, Treasury Department, Washington. It shows proper construction of an efficient, dust-tight coal bin and a bin-feed stoker. Another illustration on the right presents a typical complete stoker assembly, consisting of a wind box and screw, retort and tuyeres (pronounced "tweers").

Fuel is drawn from a hopper or bin by an iron worm that operates inside a casing, and is fed into the retort or fire-box from below. Air is blown in through openings in the tuyeres, which form side-walls of the retort, and thus is forced up through the bed of coals and out the chimney. Coal is pre-heated before it enters the fire-box, and "cokes" before it is burned. Escaping gases are carried up through the glowing coals, with an ample supply of air, and are burned before they can escape up the chimney.

When bituminous coal is burned in a stoker it forms a clinker ring that is forced over the edge of the retort by incoming fuel. Clinkers are removed in solid pieces with tongs, once a day under normal firing conditions, and two or three times a week in mild weather. This is a decided improvement over the handling of loose, dusty ashes resulting from hand firing.

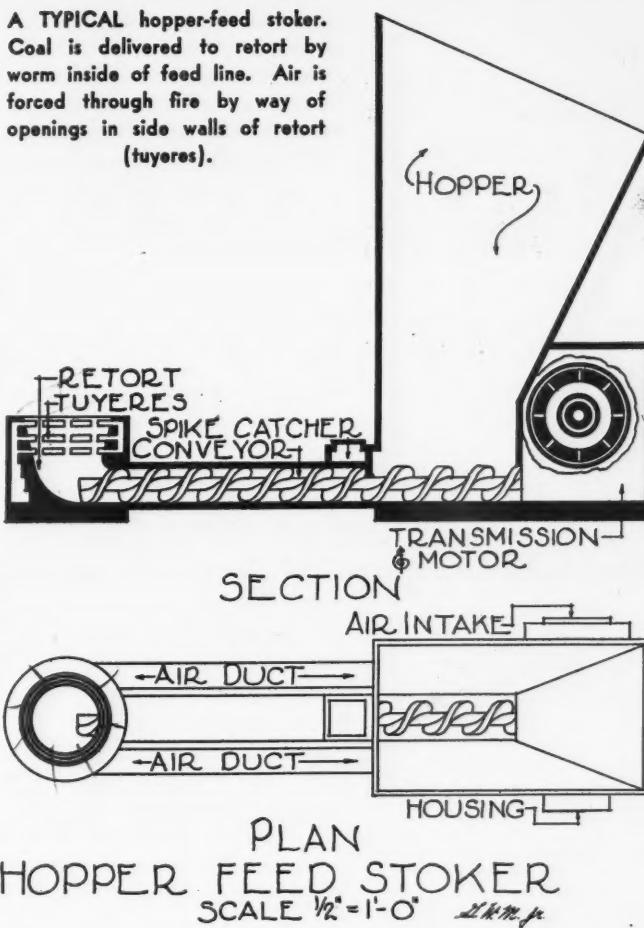
The flow of coal, and the amount of air fed to the fire are controlled automatically by thermostats or aqua-stats. The fire operates continuously and provides sustained heat. Automatic devices take care of warm days when minimum heat is required, and provide for intermittent operation sufficient to keep the fire alive, without overheating. Safety devices shut off the flow of fuel in case of overheating, or in case the fire goes out.

There was not utter harmony between stoker manufacturers and coal merchants during earlier stages of development, partly due to claims of overly enthusiastic stoker sales representatives that their machines would burn "sweepings, screenings, or the cheapest coal.

Growing demand for stokers has resulted in the development of special stoker grades of coal, properly sized and dust-treated. These clean new coals are a big factor in overcoming objections of women against the installation of heating plants that burn solid fuels, as will be explained in more detail. One of the most recent advances has been taken by the Midwest Stoker Association, a local organization of retail stoker sales agencies in Chicago, which has issued a coal-selection chart for Chicago coal retailers. The chart specifies a 1" top size for residential stokers up to and including 50 lbs. of coal feed an hour, although the chart indicates that 1 1/4" top size can be furnished and used with satisfactory results. Intelligent use of the chart, it is claimed, should eliminate complaints from stoker users that too large pieces of coal are crushed by the screw conveyor, causing unnecessary and objectionable noise. So far as is known, this chart is the first of its kind issued for distribution to dealers or others interested in stoker installations.

Not all coal dealers are enthusiastic about stokers, but generally they regard them as saviors of their domestic fuel markets, have taken over stoker sales agencies, and are going after the business energetically.

A TYPICAL hopper-feed stoker. Coal is delivered to retort by worm inside of feed line. Air is forced through fire by way of openings in side walls of retort (tuyeres).



These enthusiastic dealers maintain that a coal bin should be built into every new home, regardless of the type of fuel that is to be used.

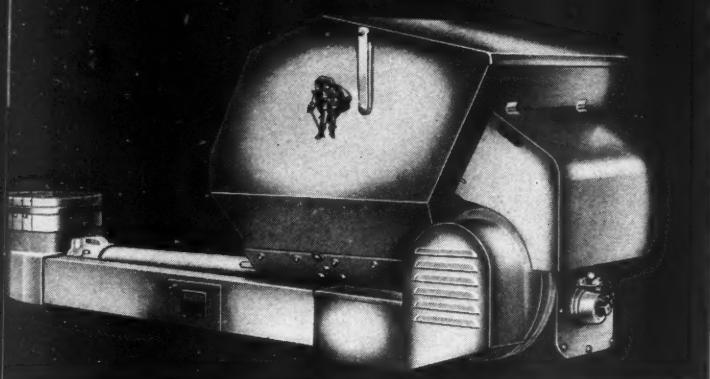
During the past few years a number of dealers have experimented with "heat service plans" for stoker users. Service includes the sale and installation of a stoker on either a purchase or rental basis, the sale and delivery of stoker coal (in sift-proof bags, if desired), remove clinkers, fill hoppers at least once a day, remove clinker cans, vacuum clean the heating plant at least once a year, keep automatic coal burner in repair (labor free, parts extra), and any other suitable service. Some of these early experimental efforts have been quite successful, and from them probably will be patterned the ultimate service for stoker users.

The success of stoker installations by contractor-builders depends largely on proper construction and location of coal bins. The location and type of coal bin depends largely on how the basement is to be used.

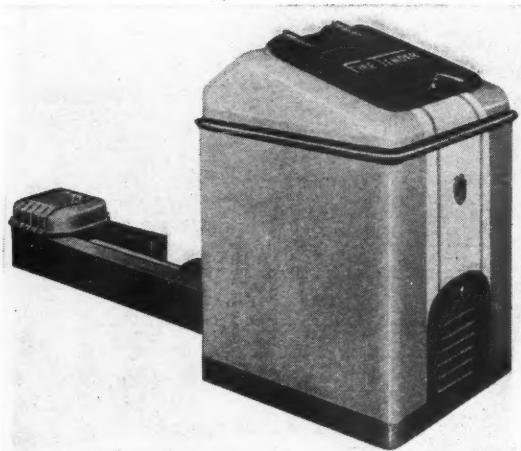
If a builder wants to get maximum space for a basement recreation room or workshop, the coal bin can be built outside of the foundation walls. Accompanying cross-section diagrams by Mr. Murison show proper construction of coal bins that can be installed either outside or inside the basement. Outside bins usually are placed under a driveway or under the floor of an attached garage. Coal is dumped into the bin through a manhole or coal window in the driveway, or garage floor, or wall. Note how side walls converge. They should slant at an angle of not less than 45 degrees. Coal settles to the center without arching, and is picked up by the screw conveyor. This construction insures proper drainage of wet coal, although it is not always necessary to build sloping walls. The coal itself can be used instead to build up the bottom and sides. This surplus serves as a reserve supply.

COAL STOKER ROUND-UP

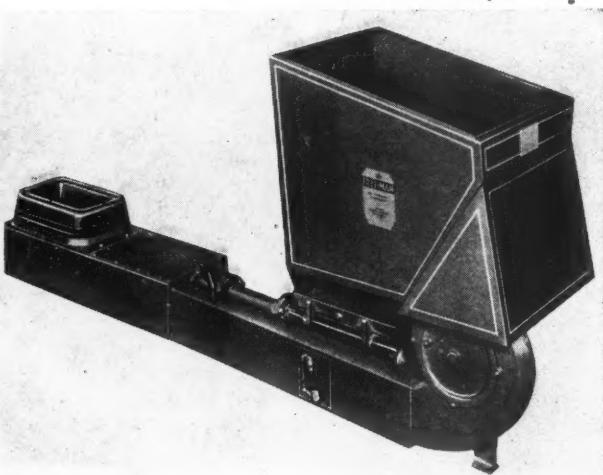
Presenting pictures, trade names, sources, and salient features of some leading residential coal stokers



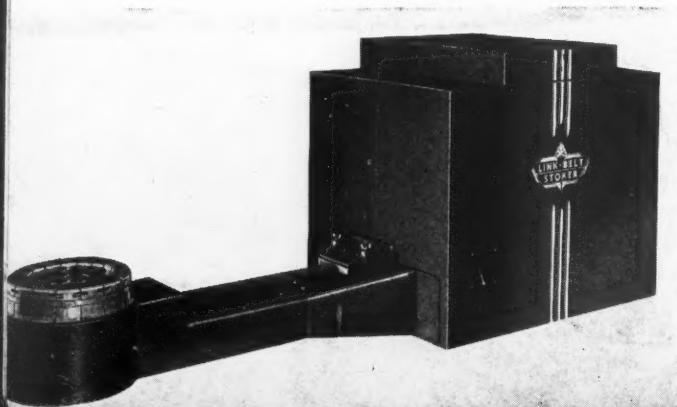
AN "automatic respirator" that produces a breathing fuel bed is featured in this Combustioneer "Furnastoker," made by The Steel Products Engineering Co., Springfield, Ohio.



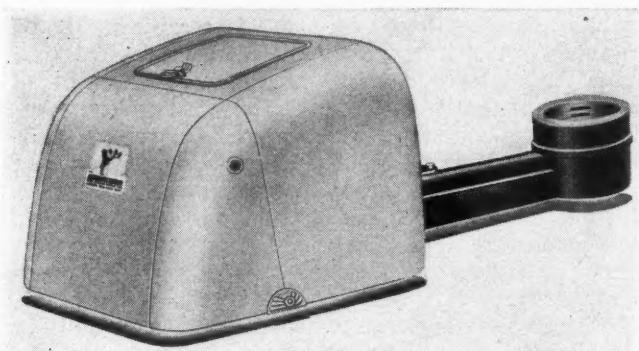
SILENT oversize fan, silent oil flow drive unit, and automatic throwout are featured in the Fire Tender stoker, made by Holcomb & Hoke Mfg. Co., Indianapolis, Ind.



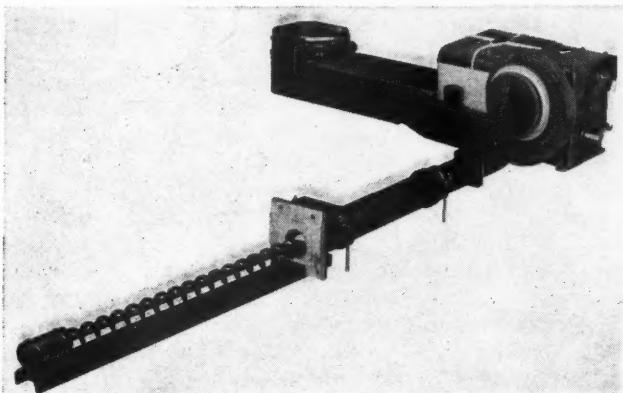
LARGE-CAPACITY hopper, and spring-mounted motor are listed among features of the Free-Man stoker, made by the Illinois Iron & Bolt Co., Carpentersville, Ill.



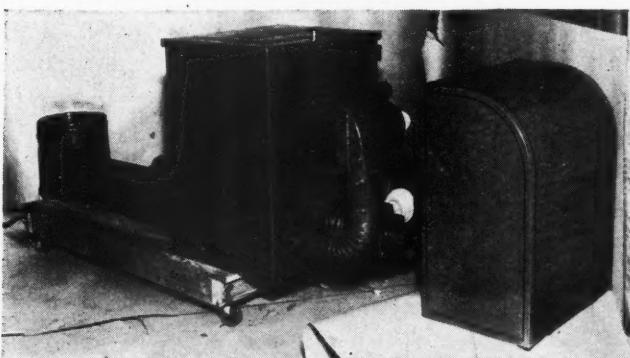
LEFT: The Link-Belt Company, Chicago, produces this residential stoker for bituminous coal, an anthracite model, and various sizes with rectangular and sectional retorts for square boilers and furnaces.



HOPPER-FEED Butler stoker, made by the Butler Manufacturing Co., Kansas City, Mo., also produced in a bin feed model. Interchangeable retort parts are stressed by the producer.



THIS Stokol residential model has an almost limitless number of usable speeds, and transmission control that permits fan to operate without feeding coal. Made by the Schwitzer-Cummins Co., Indianapolis, Ind.



AUTOMATIC shutters seal the air line so that furnace will not suck in cold air when the fan is not working on this Nelson stoker, made by Heating Assurance, Inc., Spokane, Wash.

SLA

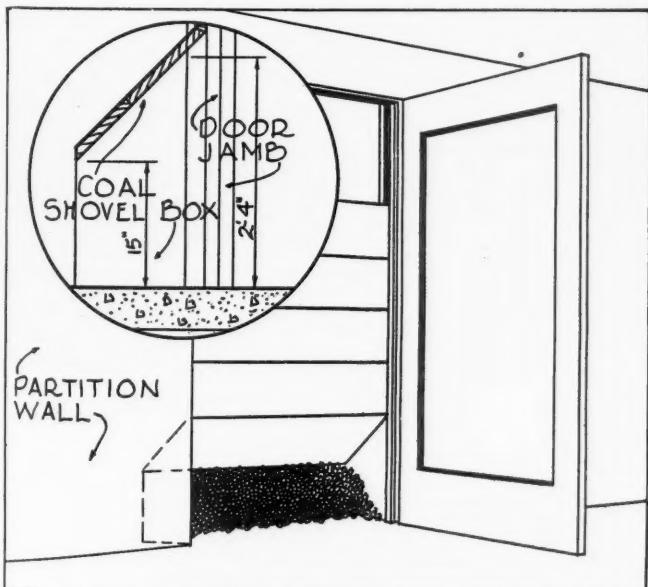
When a stoker and furnace, or stoker and boiler are located in a recreation room, rather than in a separate heater room, the stoker feed line may be installed below the floor level.

When the coal bin is to be installed inside the basement a different type of construction should be used. If the bin is placed in a corner of the basement, two foundation walls can be used. Sides of the bin should converge towards the center, as in the outside installation. These side walls may be of concrete or wood. Inside walls of the coal bin should extend from floor to ceiling, and the entire bin should be dust-tight. Side walls can be built of tongue and groove stock, preferably end-matched, to assure tight construction. In case shiplap or boards are used for the side walls, the bin should be lined with sheet metal, or some other sturdy material that can be laid with lapped joints. The ceiling, as well as the side walls, should be made dust-tight. A drain is recommended to take care of excess moisture.

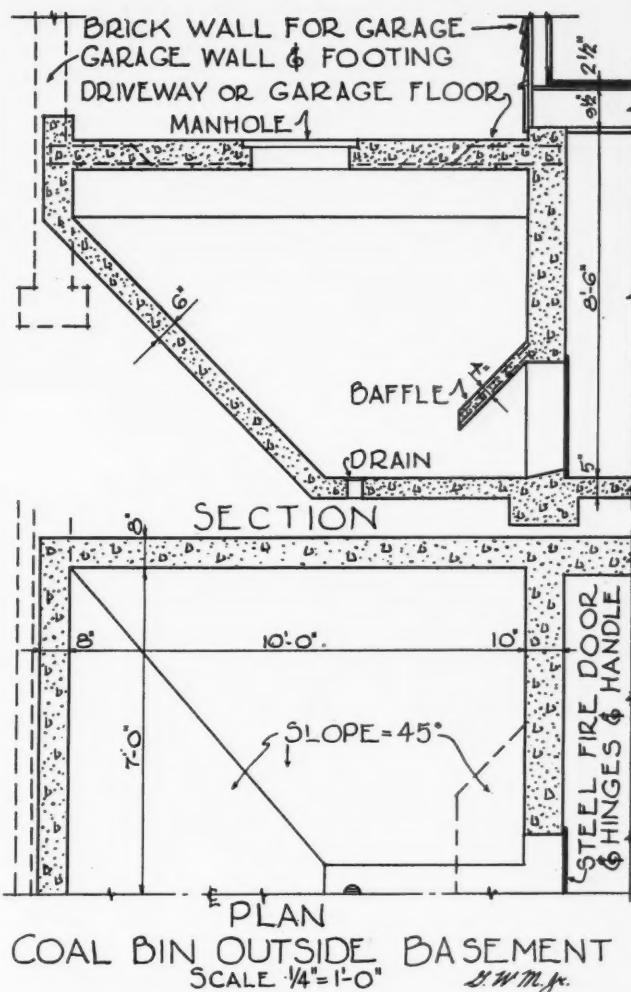
Location of the coal bin will be determined by position of the heating plant in the basement, and location of an outside driveway or street from which coal deliveries can be made. Too many coal bins are placed on the "wrong" side of the house, with the result that coal has to be unloaded in the street, "wheeled" across lawns, or has to be carried in bags. Coal merchants in many towns and cities make an additional charge anywhere from twenty-five to seventy-five cents a ton for deliveries from wheelbarrows, or in bags. *These additional charges, taken over a period of years, cost far more than a little foresight and care in proper arrangement of basement space in the first place.*

A driveway consisting of two thin ribbons of concrete will not stand up under the weight of a five-ton truck loaded with coal. General dissatisfaction, grumbling, and buck-passing, inevitably follow when coal delivery trucks break up driveways. It is far cheaper in the long run to pour a properly reinforced driveway when the house is built.

Regardless of whether coal is to be chuted, wheeled, or poured into the bin from bags, a coal window and built-in chute is desirable. When coal is put in through an ordinary basement window, broken panes of glass are inevitable, and are not easily replaced in mid-winter. It usually is necessary to climb over a pile of coal to



SLANTING baffle of this "shovel-box" keeps coal away from dust-tight door, that is latched shut while bin is filled. Removable boards in slots of door frame retain coal above the shovel-box.



COAL BIN OUTSIDE BASEMENT
SCALE $1/4" = 1'-0"$ *SW My.*

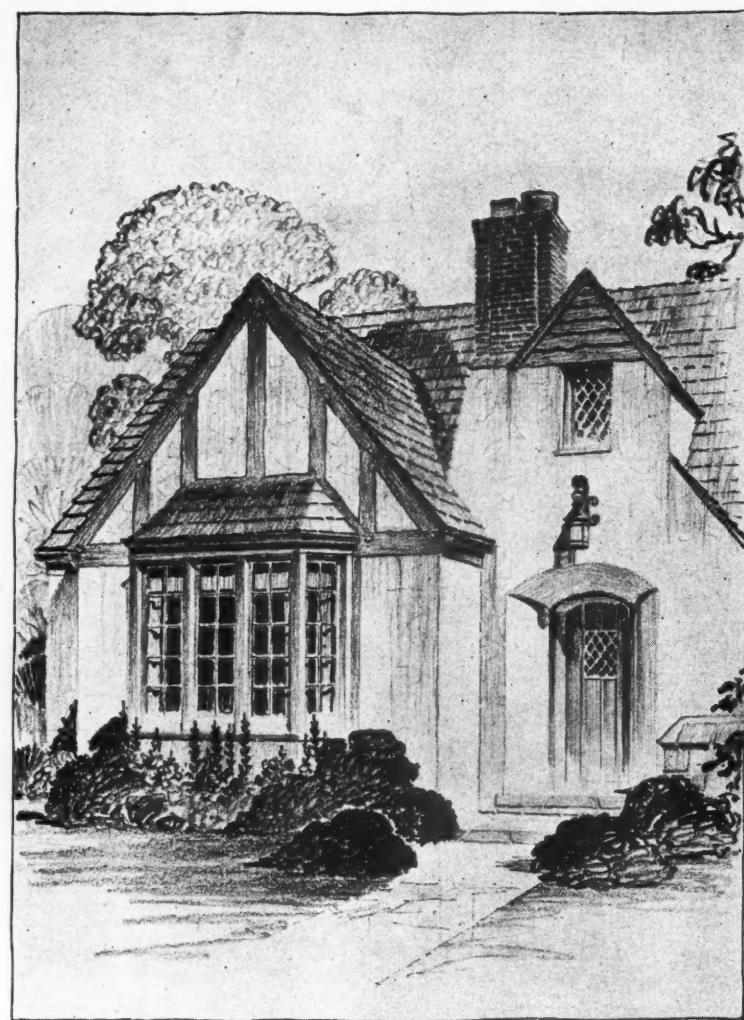
CROSS-SECTION of concrete bin and reinforced shovel-box baffle, with metal door, constructed outside of foundation walls.

close the window after the delivery has been completed. A steel coal window is more attractive when not in use, can be closed from the outside, cannot be broken into, and is more economical in the long run.

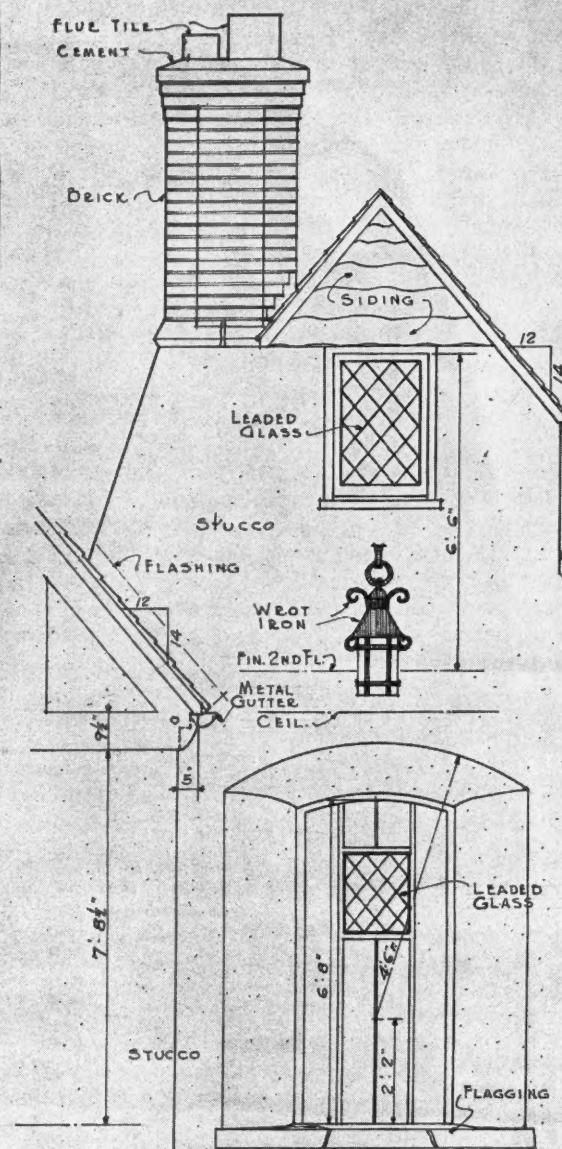
When a hopper-feed stoker is to be installed, the coal bin probably will be built inside the basement. It should be made dust-tight, but since the bin has to be opened regularly, special provisions should be made to take care of the door opening. A "shovel box," shown in an accompanying illustration, takes care of this very nicely. The box consists of a recessed opening built into the bin above the floor level. The top of the box is a slanting baffle-board, higher at the front than at the back. Boards are fitted into a slot on each side of the door opening to height of the fuel. A dust-tight door with an inexpensive lock and knob should also be provided, so that the door can be opened easily and will stay shut when it is closed. Walls of the bin may slope inward toward the shovel box opening. When the bin has been filled, a little coal works under the baffle-board into the shovel box opening. As it is removed from the box, additional coal will work down.

The two strongest selling arguments used by sponsors of all automatic heating equipment are "comfort" and "convenience." Stoker salesmen stress comfort and healthiness of sustained heat resulting from a bed of live coals in the fire box of the heating plant at all times. They point out that their units will not overheat on warm days, because they include automatic controls for intermittent operation that merely keeps the fire alive and ready to respond to lower temperatures that will

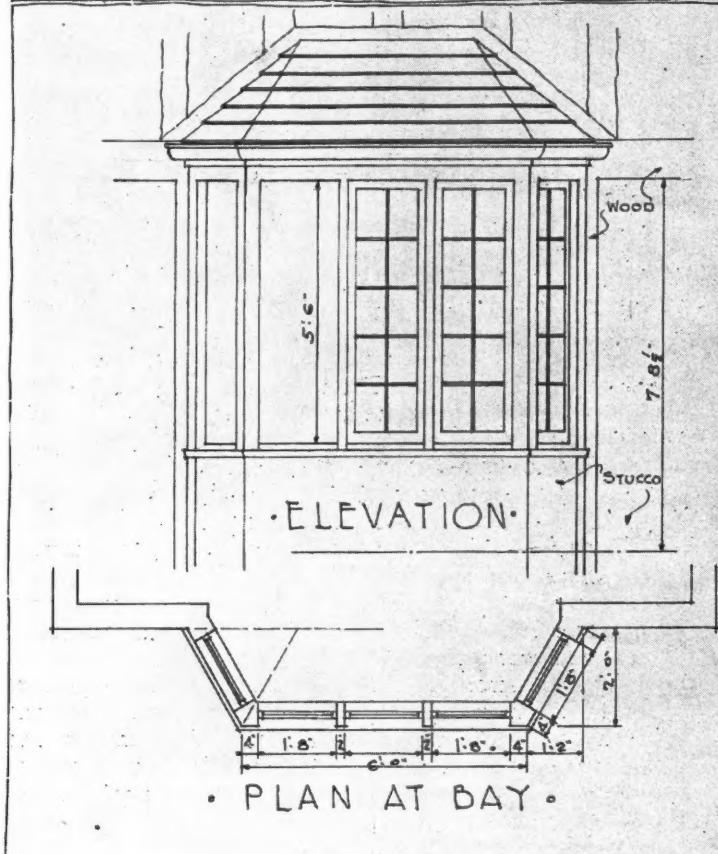
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• AN • ENGLISH • BAY •
• AND • GABLED • DOORWAY •



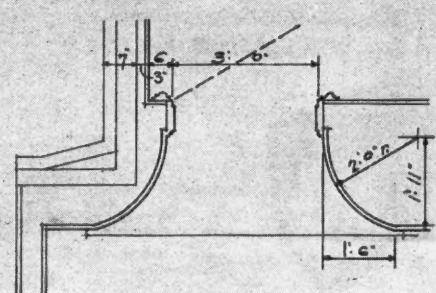
• ELEVATION •



• PLAN AT BAY •

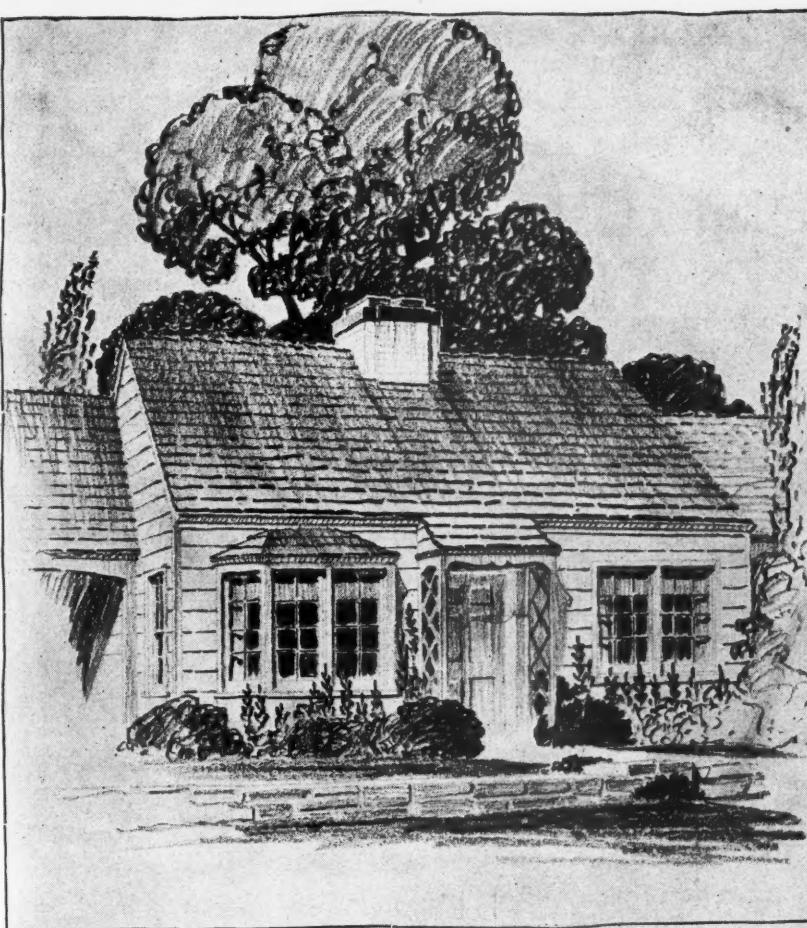
SCALE, $1/4" = 1' 0"$

• ELEVATION •

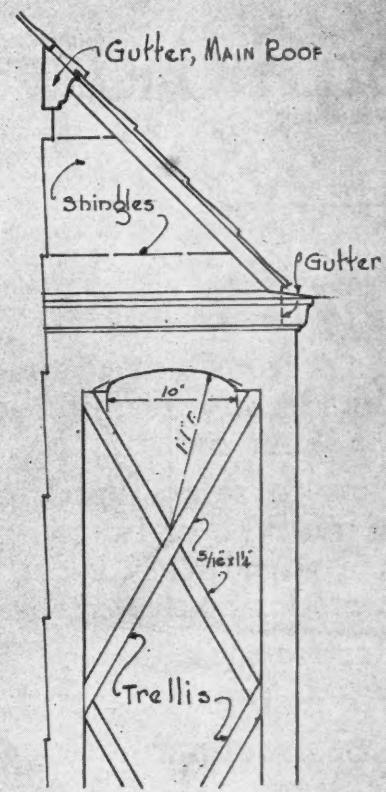


• PLAN AT DOOR •

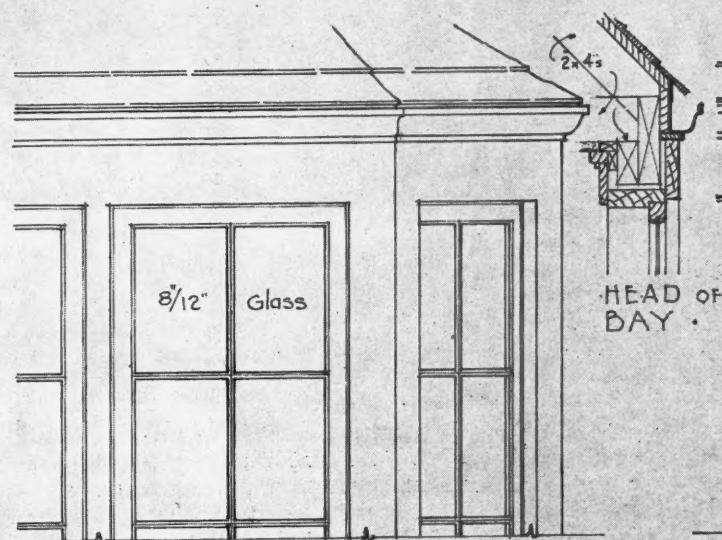
J. J. Falkenberg, - '36
Architectural Engineer



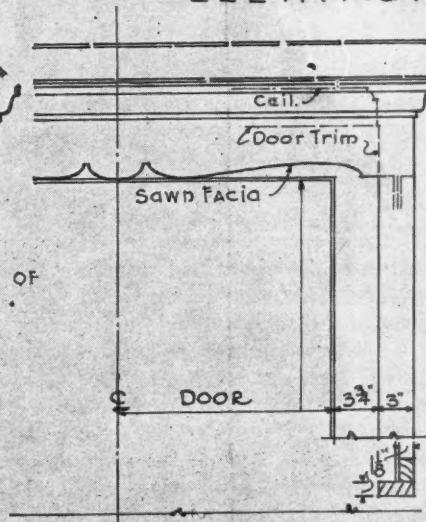
CAPE COD TYPE.
BAY AND LATTICED
CANOPY.



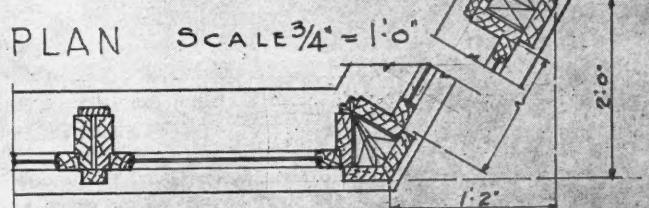
SIDE
ELEVATION.



PART ELEVATION OF BAY.



ELEVATION.
HALF OF CANOPY.



J.J. Falkenberg - '36.
Architectural Engineer.

Seven Steps to Success for Subdividers and Developers

By L. H. MILLS

of Mills and Sons, Inc., Prominent
Chicago Operative Builders

1. **How to select the right time to buy the right land for home building.**
2. **How to select land for a given type of homes, and appropriate layout of plots for homes.**
3. **Restrictions.**
4. **Financing.**
5. **Construction.**
6. **Marketing.**
7. **Business integrity and ideals, as related to this subject.**

BEFORE buying land for the building of small homes, we must consider both the *encouraging* and *discouraging* factors with relation to the *timing* of our venture, and our decision to begin operations, must be the result of *satisfactory* findings, with respect to such questions as,—

(a) Is there sufficient evidence of a satisfactory volume need for the homes we plan to build?

(b) Are rents at such a level, as to argue *for home ownership* as *against renting*, or, at least, does the rent level *trend* point upward with a sufficient degree of definiteness to suggest satisfactory home buying interest?

(c) Are our potential home buyers earning enough to indicate the hope for payments *large enough* to fit in with our project?

(d) If we can get payments from our buyers, large enough to suit us as builders, and large enough to make our purchase money contracts sound, will the home buyer have enough left in his monthly pay envelope, (after making the required payments to us,) to satisfy *other* reasonable demands of his family? (parenthetically, let me here suggest, that if a home buyer, after making his required payments to us builders, has not remaining, adequate ability to provide reasonably for food, clothing, education and recreation, then we are contemplating an *unsound sales program*.)

However, affirmative conclusions and/or answers to these questions, supported by reasonable evidence, should justify assuming that the time to build is at hand.



Assuming that our analysis of market conditions justifies us in going forward with our enterprise, we proceed to consider the selection of a suitable site.

Let me say at the outset, in the words of one authority on this subject, that many *otherwise* sound home building projects have failed as a result of "trying to *find a use* for a piece of land, instead of *finding the right land for a specific use*."

Another sound piece of advice, important in considering our evening's topic is this,—"Select a piece of land that is a *little too good*, rather than *not quite good enough* for the type of homes planned to be built,"—To emphasize this thought, if I were planning to buy a home I would place the *selection of the site* as *first* in importance, and consider the style, size, price and details secondary.

The *price* we pay for land, must be justified in the light of the value of like land of comparable advantages. If we pay more than real value for our land, our operation is, at the very outset, handicapped. The less we pay for land the greater our opportunity for giving attractive, sound value to our home buyers.

If we are to have a successful home building venture,

every step we take,—every policy we adopt,—must be undertaken after asking ourselves this question,—“Will the plans we have in mind tend to produce a community of *contented* home owners?” If we fail to govern most of our policies by the right answer to that question, we are building false hopes and a *socially* and *financially* unsound project.

Now, in general, we must maintain a degree of reasonable relationship between our own venture and the type or character of other land developments, in nearby areas. Of course, this thought is of greater or lesser importance, according to the *larger* or *smaller scope* of our own project. If our own plans contemplate the creating of a sizable independent community, we are, in proper ratio, less subject to surrounding influences. However, generally speaking, we should, in the selecting of our site, be alert to the possible *good* or *bad* effect of surrounding activities and their *enhancing* or *detracting* effect with respect to our own enterprise.

Work with Natural Trends

It is usually rash and unwise to attempt major changes in the *natural usage character* of land.

We should select land which lies in a *natural* path of development and *trend* of population growth. While it is true that much may be accomplished by ourselves, through active campaigning, in directing attention and growth toward our development, in bringing improved transportation facilities and other necessary improvements to our area, our own job will be made much easier if the *natural* forces of development point in our direction.

We must always be alive to community activities, in the area in which our interests lie,—and must be prepared to participate *actively*, either *for* or *against* such activities, our actions in this respect depending upon the potential influence of such activities, good or bad, upon the value of our holdings. To illustrate:—A small group or faction close to our project may, let us assume, for political reasons, attempt to use the tax paying power of our area to feed or support some “half baked” project which may mean little or nothing to our own particular community,—proposals to create large park districts, or proposals to install wholly unnecessary and premature improvements, are typical possibilities which may create a costly menace.

Where the financial structure of a home building program permits, much may be done by way of increasing, potential profit by acquiring land surrounding or contiguous to, our own original site. Substantial additional profit is thus assured because, we secure *unto ourselves* the benefit of increased values brought about by our own initial project, instead of waiting until our building development improves *surrounding* land values, and then paying the higher price value which our own efforts have created.

Of course, our land must be located within reasonable distance from (if not already served by) fundamental conveniences,—such as, transportation, good water supply, sewer facilities, gas, electric current, schools, churches, parks, playgrounds and shopping center. Without all of these facilities either available, or at least contemplated in our plan of development, we have an unsound project, socially and financially. A more particularized treatment of a given individual home building project would, of course, indicate varying requirements with respect to these fundamentals. The necessary *degree* of perfection respecting all of these community assets will vary widely according to the *price range* of our contemplated homes. To illustrate:—Good roads and the uni-

versal use of the automobile, may, in given cases, modify in some degree the need for other nearby forms of transportation. However, we must not unwise depend too greatly on these modifying factors. A truly ideal program will provide not only good roads but good transportation in other forms as well.

Subdividing acreage into building lots, too far in advance of our actual beginning date of construction, is unwise. Taxes on acres are low: Taxes on lots are higher. In addition, our plans for layout, made today, may be much improved upon later.

If our financial resources permit, we will save both time and money by installing street improvements by private contract, rather than by the special assessment plan. Under the private contract plan we need not subdivide any area until we are more nearly ready to begin building operations, because the several necessary steps in a special assessment program require request for estimates, public hearings for or against the proposed improvement, delays required by possible physical changes following public hearings, awarding of contracts, and waiting for the successful bidder to get started, etc. etc. Alongside of this tedious program, (and entirely aside from the saving of money), the execution of improvements by private contract is a substantial time saver, and remember that we are still talking about land layout.

The general scheme of layout is an important part of our program and is worthy of careful consideration. While most of our cities and surrounding areas still follow the old plan of square layout, much can be accomplished, in value creating plans of attractive appeal, by laying out winding streets, and widening approaches at important street intersections.

Much may be accomplished to make our development particularly outstanding and attractive by carefully thought-out subdivision landscaping, and this part of our program need not involve extensive expenditure.

In this connection, some valuable ideas respecting modern trend concerning land layout, will be found in a booklet prepared by the Federal Housing Administration, captioned, “Planning Neighborhoods for Small Houses”—constructive suggestions will also be found in a booklet entitled, “The Federal Housing Administration and Subdivision Planning.”

Restrictions

Here, seasoned experience, and much careful thought, must be given to our set-up and to the placing of record, of definite restrictions. In a general discussion of this kind, it is obviously impossible to lay down a detailed set of restrictions, to apply to all subdividing and building ventures. Every individual project requires its own appropriate treatment.

However, I offer a few general thoughts which seem to reasonably apply to all well considered home building projects. In the first place, inappropriate restrictions quickly and/or carelessly arrived at, can do as much to retard satisfactory progress, as proper restrictions can do good. We must constantly keep in mind that times and conditions change—a good restriction today may be a value-subtracting factor a few years from now.

I have in mind, a tract of land subdivided and offered for sale as vacant ten years ago, and restricted at that time to multifamily buildings. During the past few years, changing economic and physical conditions have made this area totally unsuited for other than modest one family dwellings, for which use the land in question is at present ideal.

Therefore, it is my belief that, because restrictions may
(Continued to page 116)

Modern Style Lighted Signs Big

New Store Fronts Designed to Draw Night Trade

REVEALING how far light has progressed as a merchandising factor in the modern commercial establishment, three store fronts in the General Electric Institute at Nela Park, Cleveland, strikingly demonstrate the developments in lighting effects as they may be applied to the store front of today and tomorrow. They show not only how light may be employed as a decorative asset, but how it can perform a definite merchandising function as well.

Three outstanding applications of light at the store front are revealed in this development in electric sign design, built-in architectural lighting effects, and show window lighting. These applications indicate radical departures from conventional practice for those merchandising institutions that wish to keep abreast of the times.

The Light Incorporated store, the largest of the three store fronts, is particularly impressive. The "Light Incorporated" sign itself is one of the first features to compel attention. This is a new silhouette creation and is modern in every respect. The letter shapes, cut out of glass, are flush with the face of the building; the light sources are built-in behind, and black letters painted on the larger glass letters create the silhouette effect. The amount of illumination coming from these letters can be increased, to show how they can be kept equally compelling if the illumination in the neighboring vicinity is increased. The G. E. monogram is lighted in the same manner. The small sign to the left of the window is also silhouetted by light from behind.

"Ball" Sign Unusual

The sign on the "Ball" store front next to "Light Incorporated" is a compelling and unusual one. Another type of silhouette letter is used in this sign; with

the deep letters B-A-L-L located in front of a hollowed rounded background, silvered in order to reflect the beautiful color combinations from colored lamps concealed below, thus silhouetting the sign letters. For further punch and sales appeal the background may be lighted by clear lamps in place of the colored. Considerable value is gained by planning the sign and its background to simulate a ball, thus tying-in the shape of the sign with the name of the store. The letters in the sign "Gifts" are silhouetted against a luminous opal glass panel across the front of the store above the display window. These letters are readily changeable, hence any desired message could be sent out to the passerby merely by changing the cut-out letters.

New Materials Used

One of the unique features of the double silhouette letter TOC sign is that much more pleasing effects are produced by using delicate colors in lighting the letters than are obtained from the usual primary colors, inasmuch as these attract just as much attention but in a more pleasing way. These letters, with the small letter shapes on the face of the larger letter shapes behind, are mounted on a stainless steel background. The front letter appears in silhouette against the larger letter which in turn is lighted by lamps concealed within the smaller letter, while the metal background is lighted in pleasing and interesting streaks of light from lamps concealed within the larger letter. With the various colors arranged on separate circuits, unusual color combinations can be obtained at will. The large panel above the doorway, lighted by lamps concealed behind, is intended for use with changeable silhouette letters with which any desired message can be conveyed to the public.



LARGEST of three demonstration store fronts designed by the General Electric Institute and erected at its Nela Park, Cleveland, display to illustrate new ideas in illuminated signs.

Sales Help

By J. W. MILFORD

NEW-TYPE Signs are obviously designed as part of the building front—not tacked on afterwards.

One of the most noteworthy features of these new types of signs is that the latest types of materials are used in their constructions, as is true in the case of the rest of the building fronts. Stainless steel and opal glass make up a large part of them. An equally important factor is that the signs are impressively designed as a part of the building front, and are obviously included with the original plans rather than being tacked on after the building construction has been completed. Modern sign construction is so outstandingly different in treatment from that in the past that the results are considerably more spectacular than any effects which were possible with the older types.

One of the most attractive applications of decorative built-in architectural lighting is the long column of molded glass extending from the bottom to the top of the Light Incorporated store on the right side. This tall glass panel can be lighted in numerous color combinations to produce pleasing color effects. Small molded glass ornaments lighted in various colors from behind help to decorate the front of the "Ball" store front which is illustrated on the opposite page.

Trap Doors in Window Bottom

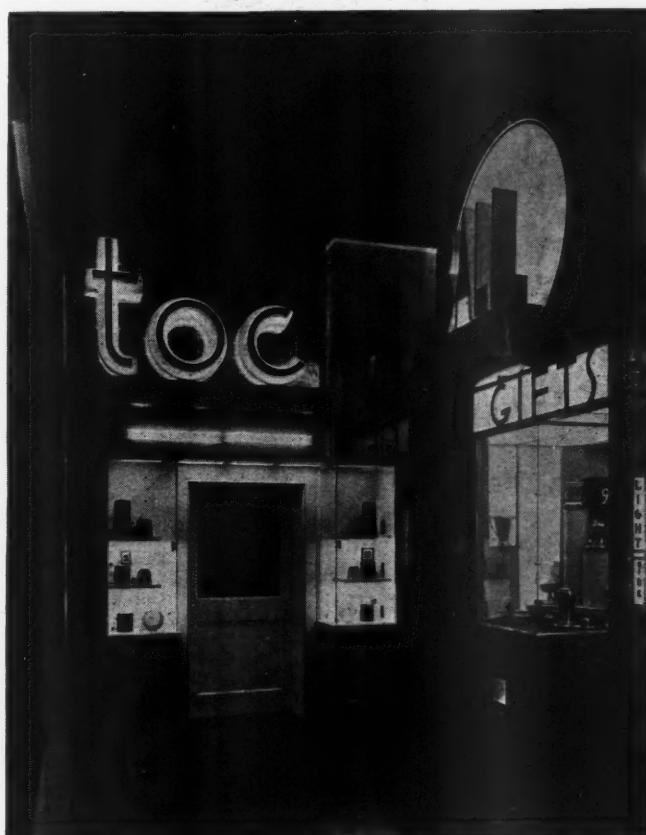
The lighting in the windows of these three stores demonstrates effectively how light serves as a valuable merchandising aid. The large display window at the front of the Light Incorporated store strikingly shows the effect of different intensities and colors of light on the appearance of the display. The levels of illumination can be built up at will by display window lighting equipment concealed above, and various combinations of color can spot or flood the displayed merchandise to give it greater attractiveness. Trap doors in the bottom of the display window can be removed and replaced by diffusing glass through which lighting units below send the light upward. On the other side of the entrance doorway a circular display window contains a model well lighted building in the miniature which has its own lighting. The entrance to the store is lighted by lamps concealed above opal glass panels.

The display window in the "Ball" store is lighted by opal glass panels across the ceiling and along the side wall, and the entrance is lighted by opal glass panels



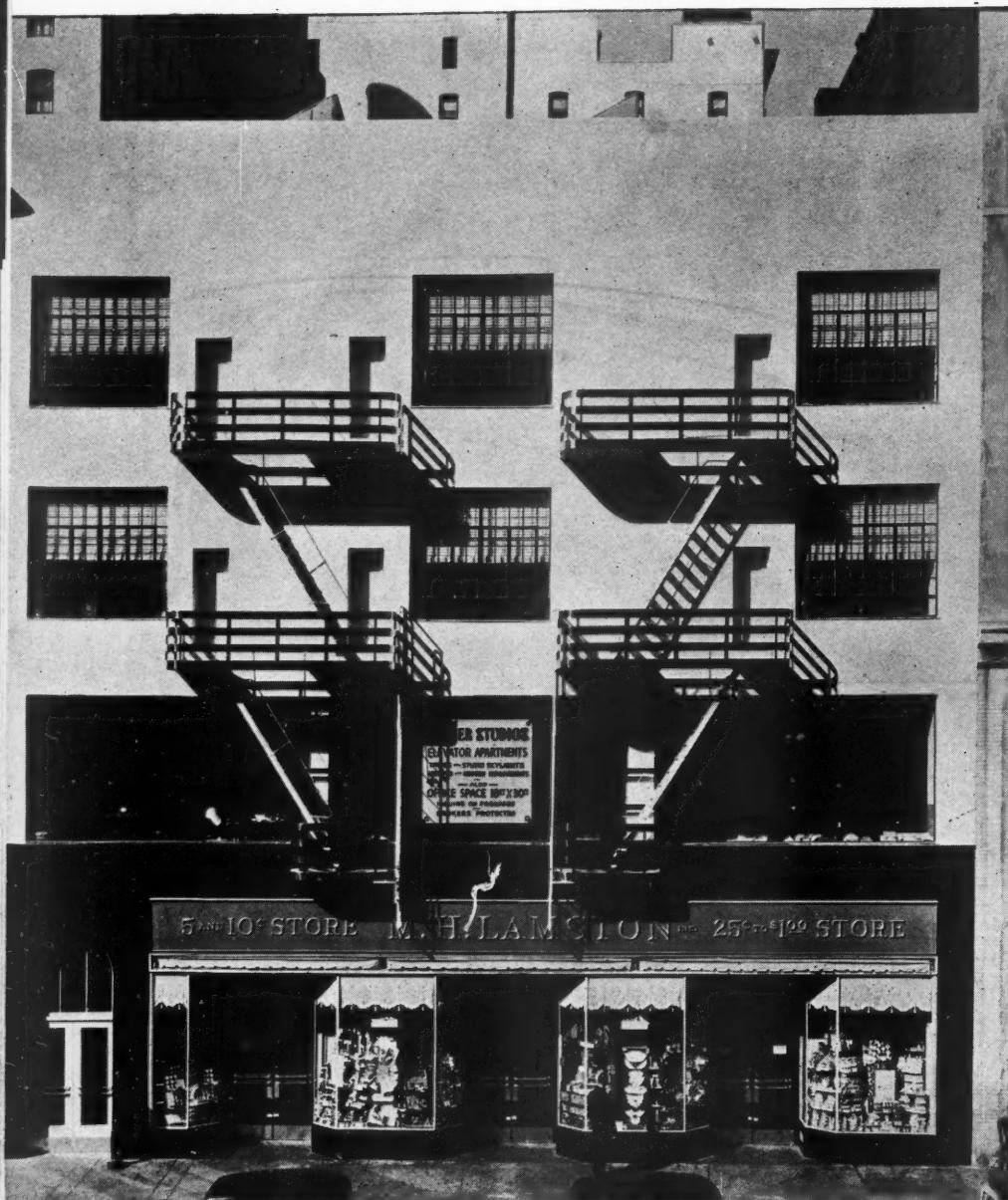
above. The small wall case on the other side of the entrance is beautifully lighted by diffusing glass tubings shaped in a half-circular background which are lighted by colored lamps behind thus giving the merchandise on display any desired attractive tint.

The windows and the entrance way in the TOC store are lighted by flashed opal glass panels above. The bottom of each shelf in the display window contains lamps which light the shelf below.



DOUBLE SILHOUETTE letters in the TOC sign are pleasantly lighted in delicate colors. The lamps are concealed within the small letters and illuminate the stainless steel background.

Modernized to



BEFORE MODERNIZING this unsightly structure consisted of 3 antiquated tenements of 7 rooms each and 3 stores. These were altered after careful study to provide radically improved type of housekeeping studio apartments and 3 modern, full-depth stores with 14-foot ceilings.

Klein & Jackson, Builders
William L. Rouse, Architect

CENTER Studio Apartments, located between 56th and 57th Streets, New York City, is a 4-story building, the 2 upper floors containing 5 studio apartments each.

AFTER MODERNIZING: Center Studios decorative chrome steel fire-escape arrangement provides unobstructed windows.



ed to Meet Demand for Small Suites

Old Store and Flat Building in New York City Replanned for Present Neighborhood Requirements of Modern Living and Shopping Accommodations.

A STRIKING example of what judicious planning can do to eliminate unsightly structures now standing on some of the finer avenues of large cities is the modernization work completed at 1393-5-7 Sixth Avenue, at 57th Street, New York City, by Klein and Jackson Construction Company, Inc. The architect on the job was William L. Rouse. Three tenements, originally consisting of seven-room "railroad" flats, were altered into studio apartments of two rooms with dining alcove and kitchen units.

Center Studios is a four-story building, the two upper floors containing five studio apartments each. The remaining two apartments are on the second floor rear. Ample north light is supplied each top floor studio by an individual skylight. All apartments provide a large studio, a commodious chamber, luxurious bath, ample closet space, well equipped kitchen and dining alcove with every modern facility. Special attention has been given electrical outlets for labor-saving devices and additional lighting according to tenants' needs.

The street floor is divided for three full-depth stores with 14-foot ceilings, and ample window display space arranged tastefully in modern style with marble trim. The second floor front is adapted for offices and show

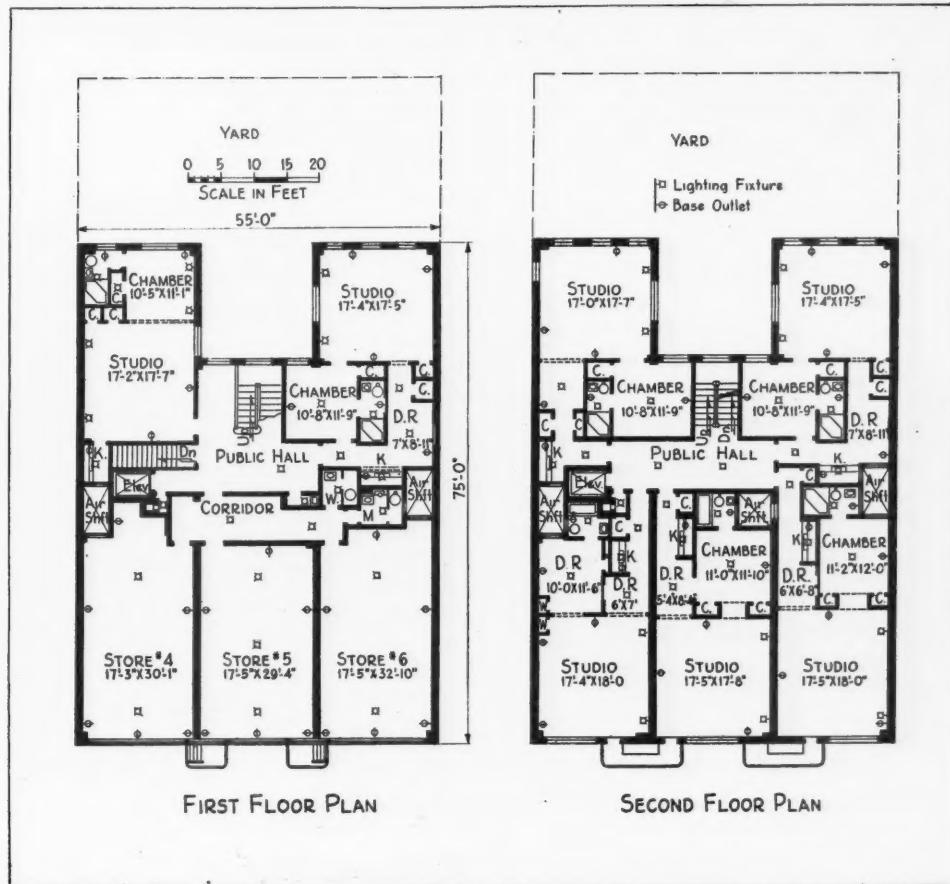
rooms with display windows which can be seen from the street below.

A unique feature of the structure's attractive exterior of white stucco and black glass is the chrome-steel fire escape balconies, which permit unobstructed use of the windows and eliminate the old-fashioned unsightly fire escapes. The Sixth Avenue elevated railroad turns west at 53rd Street, leaving this building fronting on a wide, unobstructed avenue. Central Park is but a stone's throw away.

Modern in every detail, the building contains, among other features, an automatic elevator, incinerator, casement windows, built-in dining sets, and neo-angle bathtubs. An entirely new plumbing and heating system was installed, the latter including a new Fitzgibbons boiler and a Petro-Nokol oil burner.

Klein and Jackson, owners and builders, have provided in Center Studios for a limited group of tenants a radically improved type of house-keeping studio-apartment to meet the requirements of those who desire to live with comfort and dignity at moderate expense in quarters adapted to their various pursuits. The result, it is believed by the owners, is a happy combination of practical luxury, planned efficiency and real economy.

FIRST floor plan, is above the stores and is adapted for offices and showrooms with display windows. Two apartments are placed in the rear. Each top-floor studio is supplied with ample north light by an individual skylight.





SKETCH of church now being built in King's Mountain, N.C., shows improved planning to meet new conditions in this field of construction today.

Church Building Again Active

By ELBERT M. CONOVER*
and B. C. WENNER, A.I.A.+

CHURCH building is rapidly becoming a major industry in the U.S.A. The membership of the churches is increasing more rapidly than the population, but the church has got to be "good" if it is to survive. This means that there must be an improvement of 90 per cent in the physical equipment of the Protestant churches to meet the requirements of the program and activities to which the church is committed, to say nothing of making a favorable impression upon Young America in comparison to the public school equipment of the average community.

Churches are rapidly becoming building conscious. This is due partly to the generally increasing interest in better architecture all along the line. In churches the pressure for better building and equipment results from radical changes in the church program for worship, religious education and social and recreational activities.

The building contractor and those interested in furnishing equipment for modern buildings may in many cases stimulate needed building improvements. This possible encouragement to building will be all the more effective if the contractor can speak knowingly about church program and building.

The accompanying description of the Presbyterian

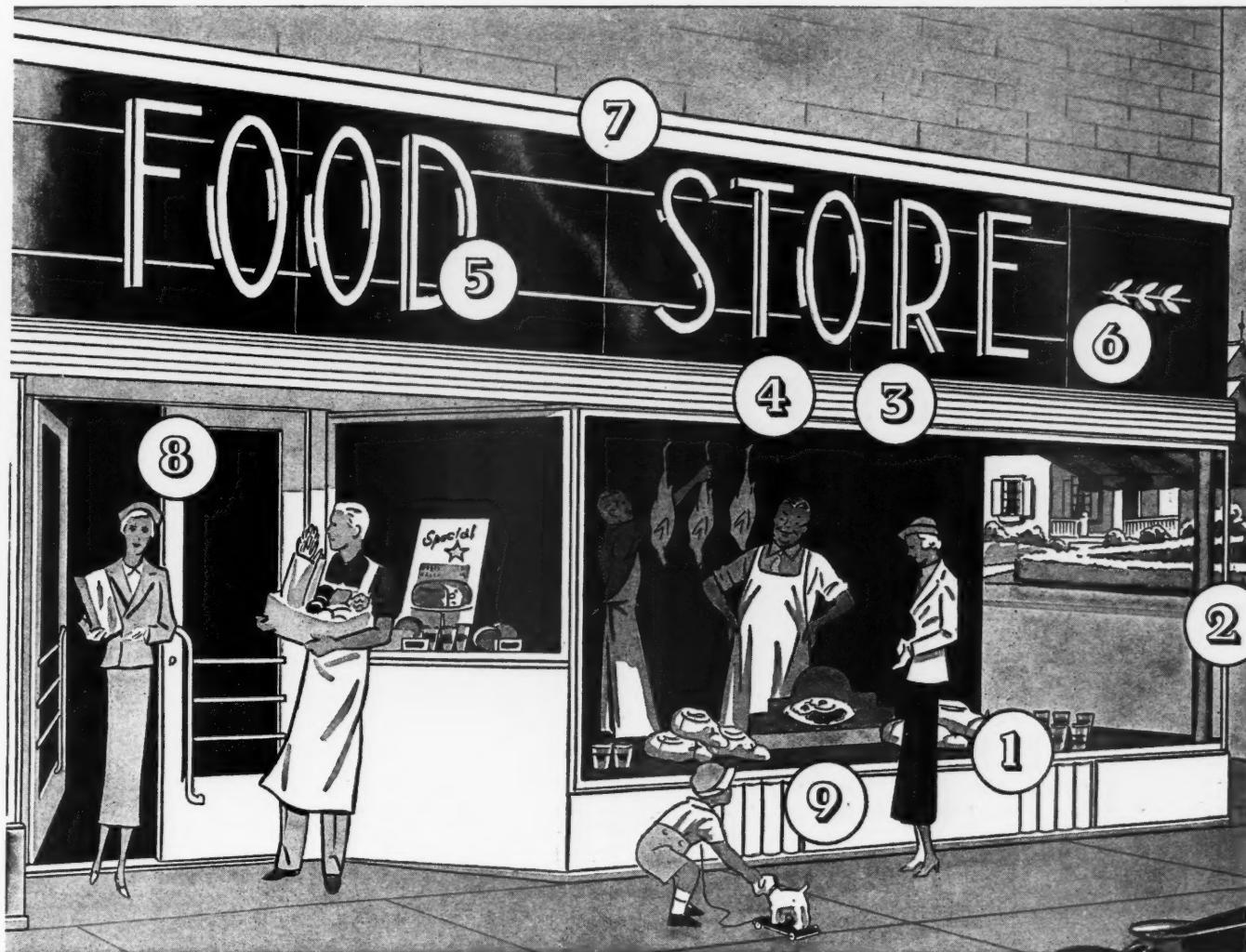
church at Kings Mountain, N.C., typifies what might take place, with a bit of encouragement, in thousands of American communities. Here is a town regaining prosperity, a congregation including up and coming people, many of whom are widely traveled. They called upon the director of the Interdenominational Bureau of Church Architecture, which is jointly supported by several Protestant denominations, to show them, with stereopticon views, the type of church building needed by them and the various rooms within, with furnishings and equipment. In fact, a member of the church made an automobile trip of 440 miles to make this service possible. During the period of constructing the building on a fine property donated by one of the members, there has been a notable improvement of tone and outlook throughout the entire community. While it is not a large church, it is a significant improvement to the community.

The architects' perspective drawing reproduced at the top of this page reveals the exterior handling of mass and detail to be very well done following the tradition of church design. An impressive dignity has been given to the structure by the architects, Wenner and Fink of Philadelphia; brick walls, Hood roof tile, antique leaded glass in steel casements were among the materials used. A beautiful setting contributes to the exterior charm.

(Continued on page 78)

*Director, Interdenominational Bureau of Architecture, New York City.
†Of Wenner & Fink, Architects, Philadelphia.

FOR LASTING APPEAL—USE MORE Kawneer RUSTLESS METAL CONSTRUCTION!



The interesting possibilities that lie in the wider use of Kawneer bronze, alumilite or other rustless metal members are practically limitless. Complete, attractive construction is available in either rolled or extruded members, and in addition Kawneer furnishes architectural metal work to special details. The use of modern Kawneer metal on even the most simple front adds life, dignity and appeal that would otherwise be lacking.

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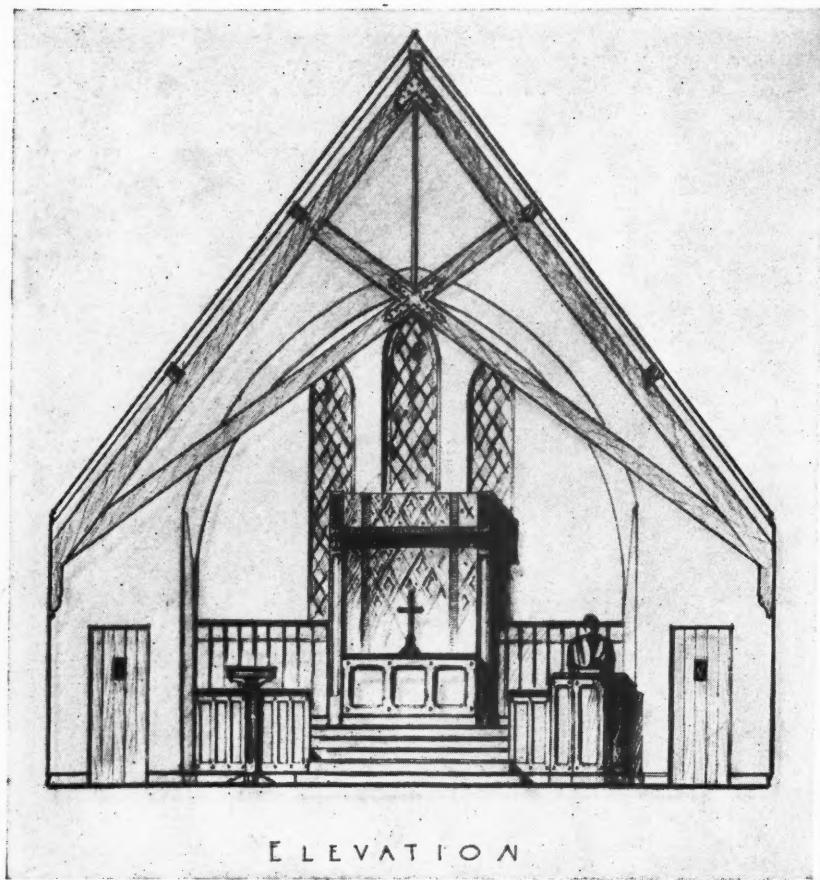
rolled or extruded Kawneer construction for (1) Sash, and (2) Bars, (3, 4) Awning Bars in Hood, Recessed or Concealed types, Transom Bars, and stock mouldings, including Snap-on mouldings and others for use with structural glass—as well as grilles, thresholds, showcase doors, ventilators, and other customary members.

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work of every type, (7) special mouldings, (8) Rustless Metal Doors, and (9) bulkheads, cornices, spandrels and pilasters. Other Kawneer members make it possible to face the entire front with metal when desired.

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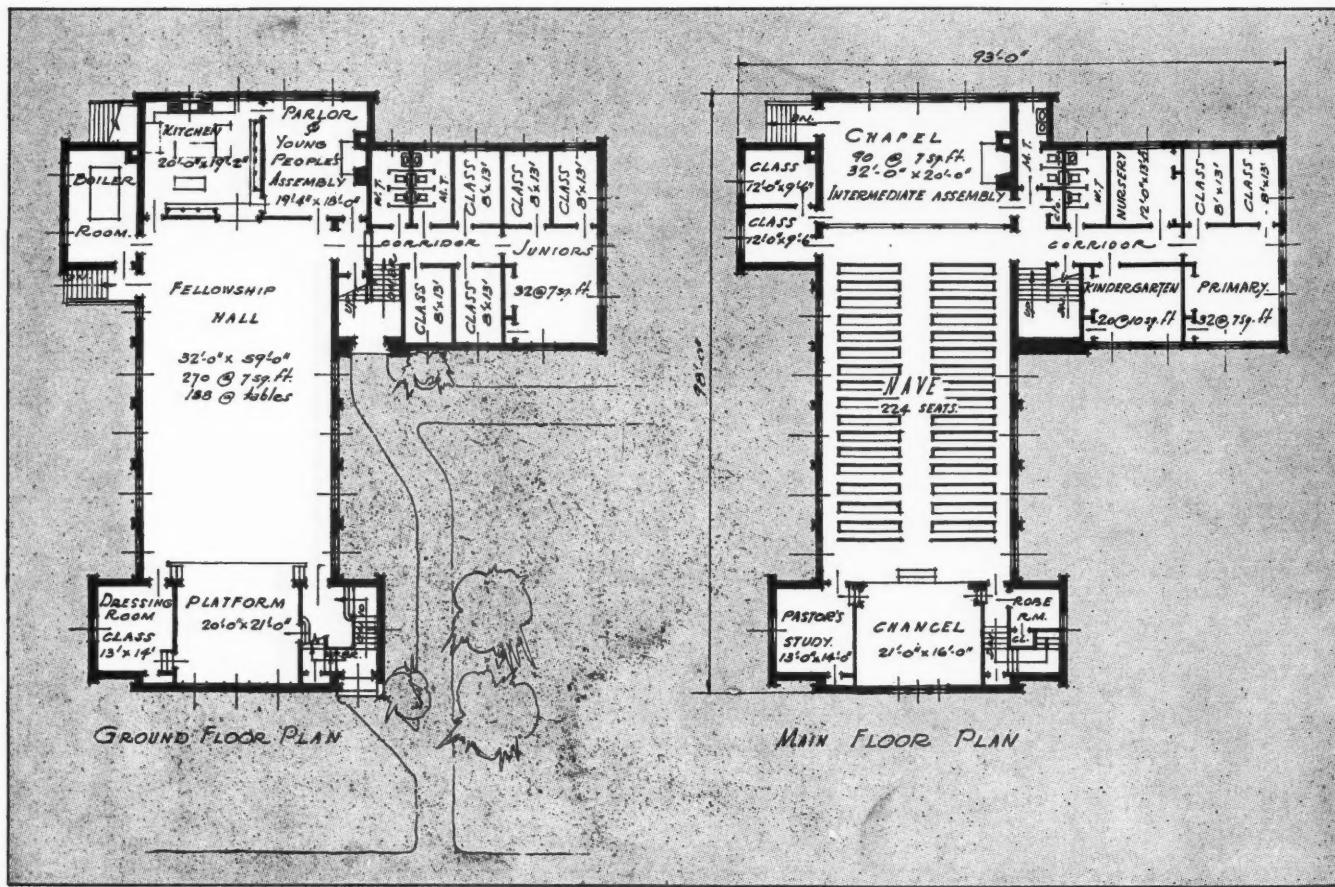
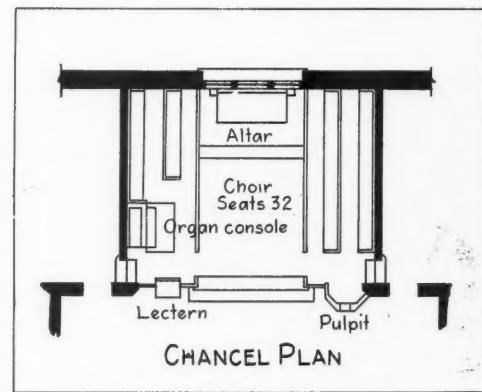


ELEVATION

ABOVE: Elevation of chancel as seen from church nave; roof trusses are of wood. The detailed plan of the chancel is indicated at the right and is inverted in relation to the position it occupies in the street end of the church as indicated in the main floor plan below at the right. Facilities as arranged in the plans fill the requirements of present church programs of religious education and other activities.

Floor plans on this page show how effectively the different functions have been planned. Church school rooms with assemblies and class rooms for different grades are grouped on the two floors in the wing. A fellowship hall seating 270 is located on the ground floor; it has kitchen and stage facilities for special and dramatic activities. The chapel at the rear of the nave can be used for church overflow when extra seating is required. At the right, an elevation of the chancel is shown and plan of this detail appears below; chancel furniture is oak.

Construction materials and equipment included wrought iron work, wood roof trusses and floors, gypsum plaster, vapor heating system and electric wiring in BX conduit. The building is nearing completion and cost about \$30,000; cubic contents, 169,500 cubic feet.



"Anaconda Copper Products sell these homes for us . . .

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Two of the many popular copper-roofed homes in Colonial Park development, Springfield, Pa. Their rustproof construction attracted crowds and led to quick sales.

Philadelphia suburban project features Anaconda Copper in advertising—drew 8,167 visitors opening day

THE Springfield Land Company has had convincing proof of the "sale-ability" of Anaconda Economy Copper Roofing and other non-rust products for the home!

The houses shown here were a success from the start. Designed right, built right, advertised on the basis of their permanence, they were eagerly seen and bought at prices which assured the profit to which the builders were rightfully entitled. *Their 1937 program at Colonial Park will feature similarly-built 3-bedroom, 1-bath homes at \$8500.00.*

Let us tell you about Anaconda products—especially about the copper roofing—lighter weight (10 oz. per sq. ft.) narrower sheets (13 3/4" between seams). What Anaconda Copper did for these builders it can do for you.

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Working With Fibre Board

THE record of installations of fibre wall board in homes, farm buildings, garages, stores and offices stands out distinctly as establishing one of the definite trends in building today. Fibre wall board and similar materials are being used extensively as siding, insulation board and as a finishing material that adds to the charm and interest of room interiors.

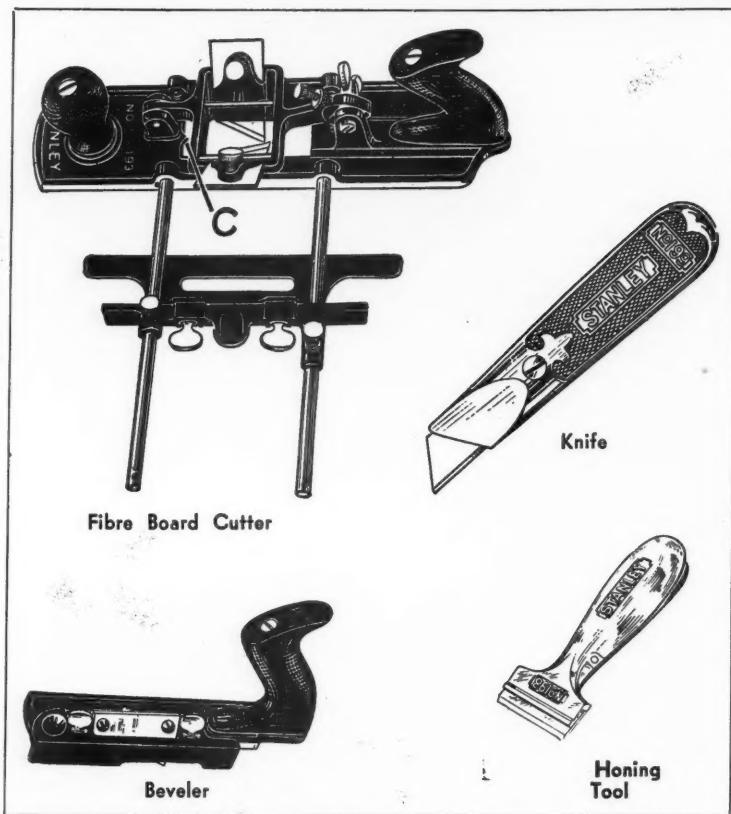
And as the use of these materials has increased, the job of the building craftsman has been made considerably easier and his work more effective by the manufacturers who have developed special tools for working wall board.

Working with the companies that produce fibre board materials, the tool designers produced a fibre board cutter. Today this tool is used by building craftsmen to slit, groove and bevel fibre board, to make battens, cut shiplap joints, to make circular cuts and all kinds of decorative designs.

To give you a better idea of exactly what the tool can be used for, look at the picture of the basement room on this page. The walls and ceiling are made entirely of fibre wallboard. The material was not only cut to proper size with a fibre board cutter, but the same tool was used for the grooving, beveling and decorating which gave the walls and ceiling their finished appearance.

On the page following you see a table that is designed specially for fibre board work. It gives the carpenter a sturdy, rigid working surface to cut and finish his material. Standing 32 inches from the floor and measuring 4 by 10 feet, it consists of two sawhorses braced by two boards just long enough to butt against the end cleats on the underside of the top.

Stops consisting of two thicknesses of fibre board are squared up with the top of the table, and nailed at either end. These prevent dulling the cutters.

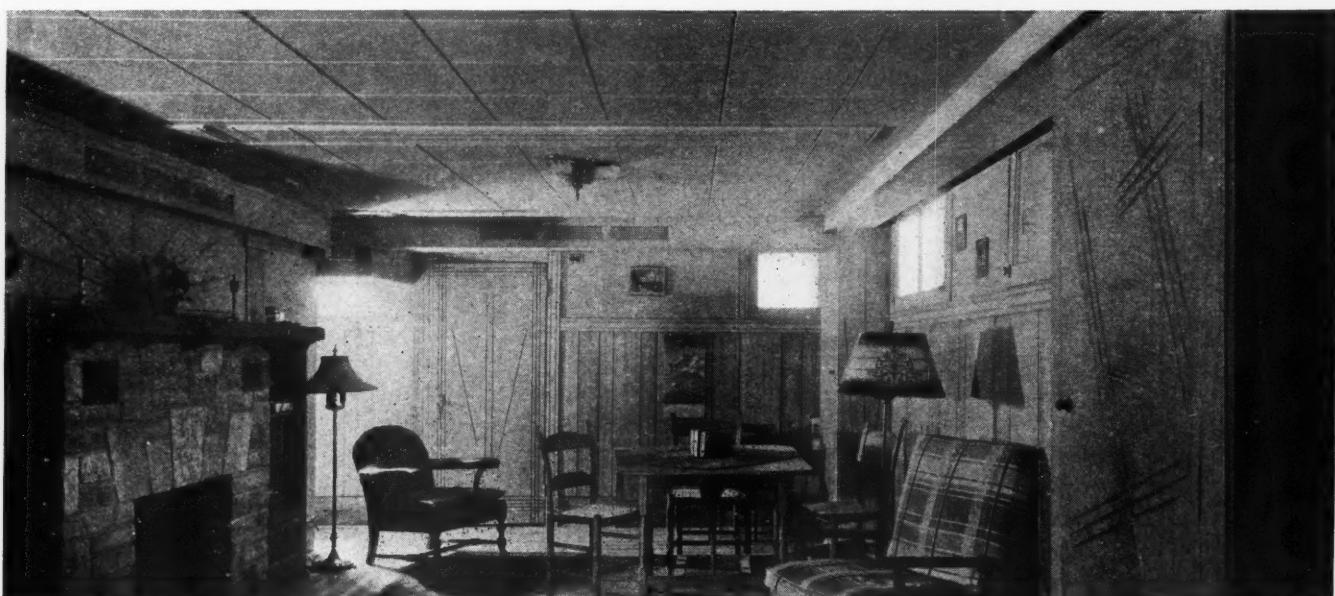


NEW fibre board tools.

A board the length of the table is used as a straight edge. In use this is squared up with the stops, and blocked up slightly to provide a space between the straight edge and fibre board allowing the work to be moved freely in and out as desired. The straight edge is fastened on both ends with C-clamps.

The table described above is ideal for fibre wall board work yet it may be considered too elaborate for the busy carpenter to build. Therefore it should not be considered essential for fibre wall board work.

Besides the fibre board cutter, there are other tools available for fibre board work. Bevelers, for instance. Each beveler is furnished with a heavy steel cutter and the particular one we have in mind cuts a bevel up to $\frac{3}{8}$ inches; a guide makes it easy to cut a bevel accurately.



A BASEMENT room entirely remodeled with fibre wall board.

Only Gas

can do so much to take the guesswork out of planning modern homes

Modern gas appliances banish once and for all at least one source of the worry and uncertainty that can make building or buying a home so trying not only for the client, but for the architect and builder as well.

For gas has a background of many decades of dependable, economical performance. It is the accepted and preferred fuel in more than 15,000,000 homes. The modern gas range makes possible controlled cooking that virtually eliminates cooking failures from oven and broiler as well as from top-burners. Along with ranges, gas refrigerators have been keyed in appear-



ance to the modern trend toward harmonious units in a carefully planned working center. And the thousands of gas refrigerators that are performing with peak efficiency after five to seven years of operation give impressive assurance of long, satisfactory service.

Gas units for water-heating have

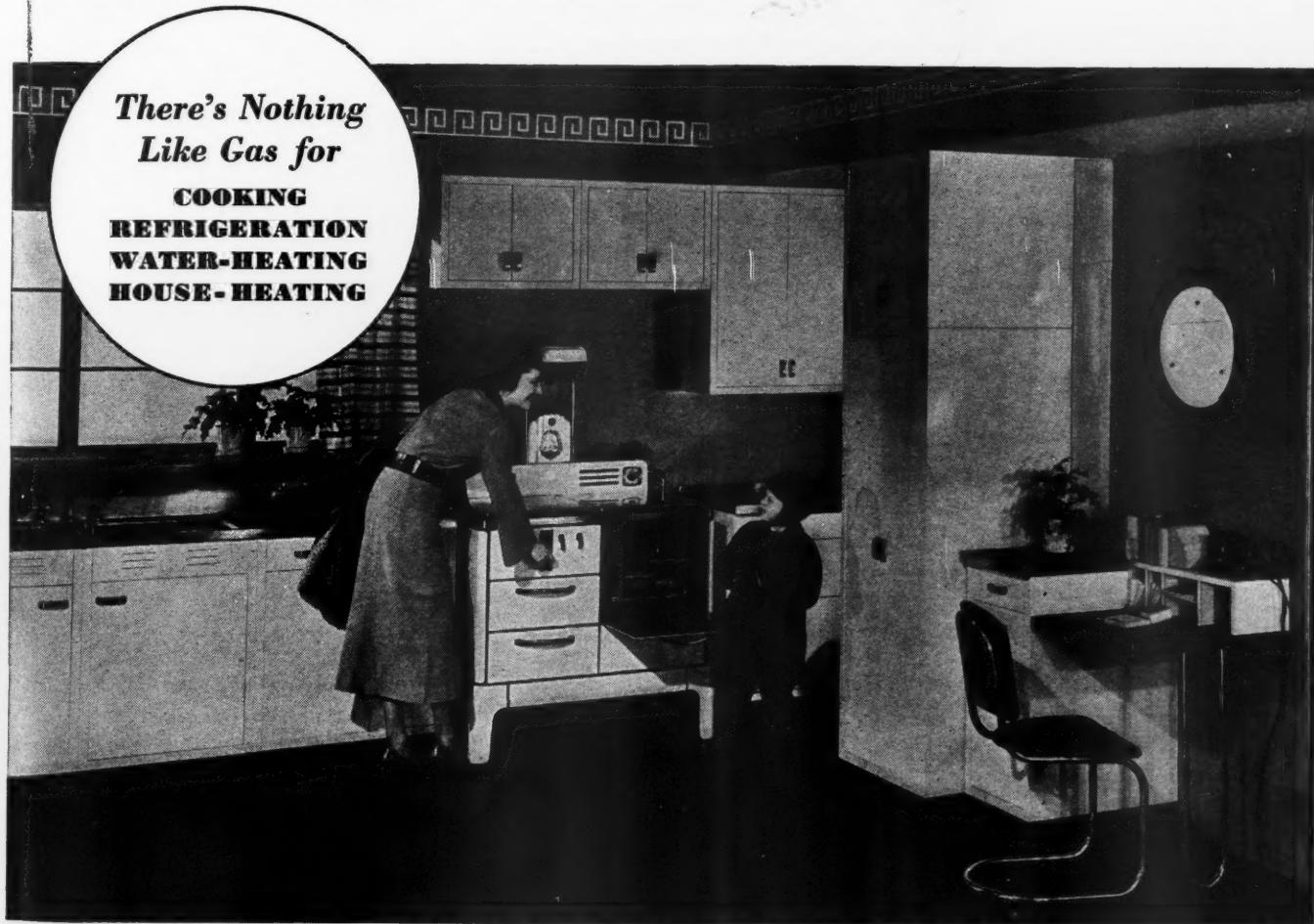
kept pace with these appliances for the kitchen. Recent application of gas for house-heating and air-conditioning insures year-round comfort with very definite economy.

A further attraction to home-owners is the substantial saving in fuel bills available to homes equipped to use gas for every heating need. Your local gas company will gladly cooperate with you in the selection and installation of modern gas appliances.

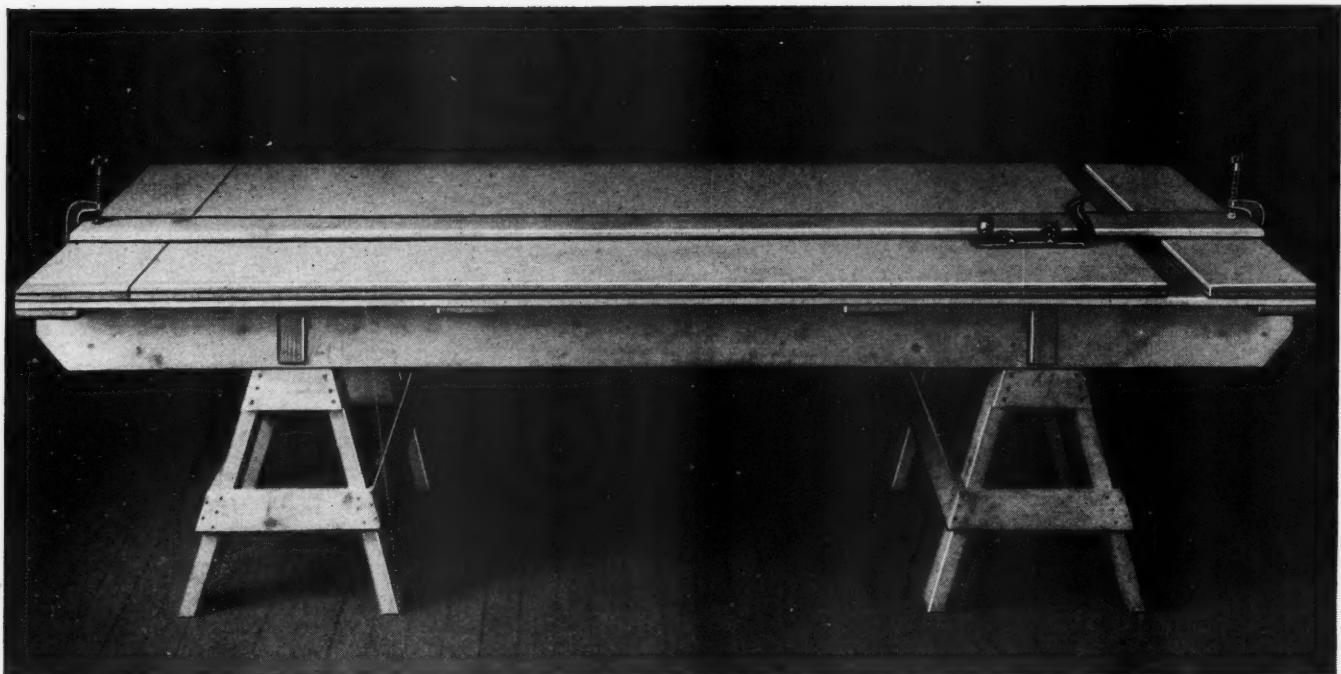


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Model planned kitchen from an advertisement in the Gas Industry's "Modernize Your Home With Gas" campaign in national magazines of 14,000,000 circulation.



A TABLE designed for work with fibre board materials.

A fibre board knife that has a razor-keen double-ended blade is especially useful for cutting and trimming, and for finishing designs made with the fibre board cutter. The magazine of this knife holds extra blades, ready to be put in and used as needed.

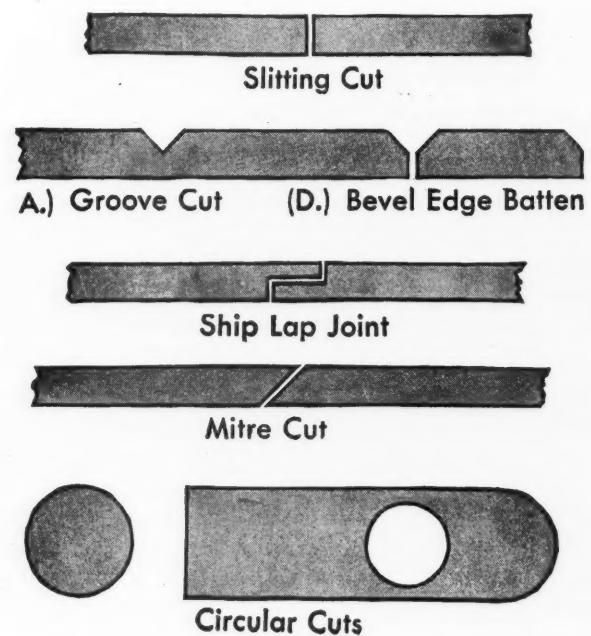
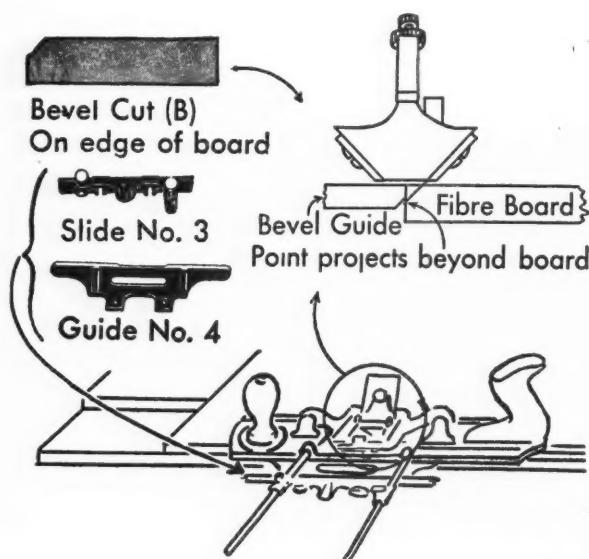
A honing tool is made that holds razor blade cutters, also spoke shave irons so that a correct bevel can be honed. This handy tool can also be used with a blade to scrape paint from windows, and for many other uses.

To cut and decorate hard fibre board other tools are available. A hard board beveler is manufactured that cuts chamfers or bevels up to $\frac{3}{16}$ inches on hard or "tem-

pered" fibre board.

A fluting and grooving tool is another one of the tools designed especially for work with hard fibre board. Made of finest edge tool steel, the blade has two keen cutting edges honed ready for use. A shaped, hard maple handle affords a comfortable grip and the tool is used in making designs simulating tile, brick, etc.

Next time you find that you're going to use fibre board on a job, get acquainted with these tools if you haven't already done so. You too will discover that they do the job better than any of the tools ordinarily carried in the carpenter's kit.



ILLUSTRATIONS show different cuts that can be made with the fiber board cutter.

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Streamlining for Real Results

Good Construction and Complete, Substantial Equipment Smooth the Home Buyer's Payoff

By V. L. SHERMAN

Department of Mechanical Engineering
Lewis Institute of Technology, Chicago

IT might as well be said at the start that the policies promoted by the Federal Housing Administration are a great step in streamlining so far as the home owner is concerned. If he is wise he will plan for a home in which there will be no hitch in equipment, no stop and go, no alterations or replacements of cheap equipment or inadequate equipment. If he is wise he will remember that good construction and complete, substantial equipment are going to prove just as frictionless on his budget as are the long term mortgage payments. He will not have to change his course in midstream, financially, to dig up for the repairs of a breakdown.

Streamlining is a much-used word. It does not seem so long ago that one of the western universities installed a large tank in which models of various hulls of vessels were towed back and forth at various speeds, registering varieties of pulls on the tow line. Of course it is a long time ago, and that method of determining flow had long been used. When the architects and designers got a hold on the idea there was some general concern but none in particular from the engineers and manufacturers be-

cause they probably felt that anything along that line would lead to more efficiency in operation and in almost any kind of construction. It does.

It seems a little too much, however, to advocate so much streamlining merely to satisfy artistic cravings when most of us are not quite so artistic. A great authority on art recently spoke with emphasis on the great change for the better in the appearance of our locomotives and even spoke scornfully of electric mountain locomotives when contrasted with the beautiful new diesels. That side of it, streamlining for beauty's sake, may be a little beyond me. And until box-cars and gondolas and tank-cars are streamlined a really husky locomotive will be a pleasing sight.

This has been brought up to point out that streamlining may all be very well from the artistic side but that there are more important reasons for streamlining which have really nothing to do with "art" unless we take it in a wide sense. Compared to the old-timers we all appreciate the reduced and continuous surfaces of the modern streamlined automobile, when it comes to polishing one up for a Sunday drive. And the modern kitchen equipment and hardware is a great relief for the housewife. Cleaning under a bathtub always seemed a nuisance. Streamlining has its advantages, and if we can appreciate the physical quality it will suit us artistically.

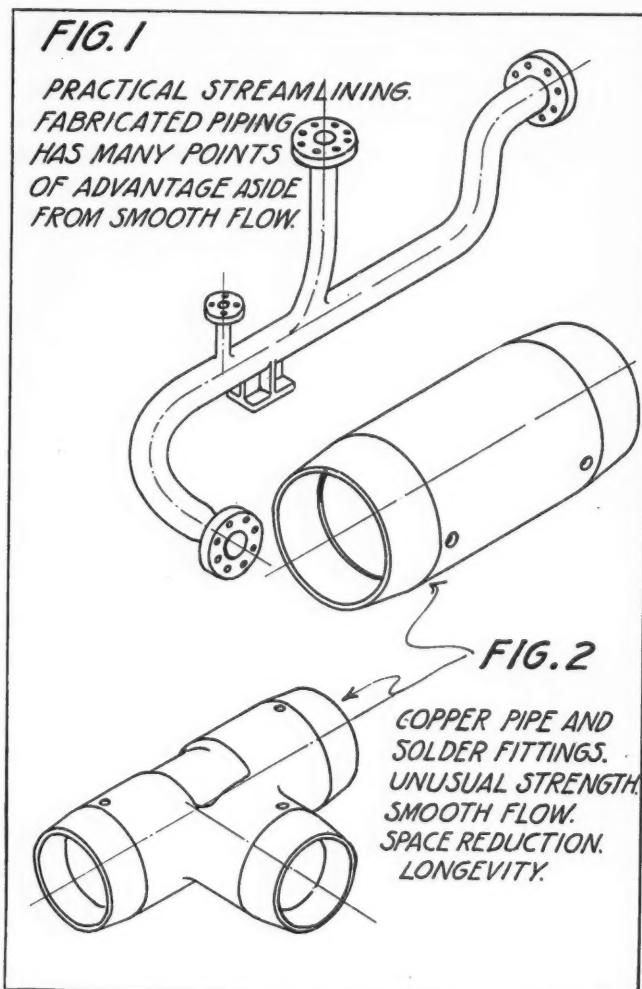
But as methods in industry improve there are many ways which show themselves to take advantage of streamlining. Any flow requires energy. Any change of flow, little interruptions, abrupt change in direction, turbulence, calls for more energy, so-called kinetic energy. Unnecessary energy is extra cost and loss in efficiency.

A fair sample of this may be had in the ordinary gravity feed warm-air furnace system. The source of the energy is the difference in the weights of the hot air delivered and the cold air returned. This source can be built up by running a hotter furnace. And it used to be cut down by making the paths for the air tortuous affairs with sharp turns and changes of cross section. Getting the leaders from the furnace to balance in their deliveries seemed too great a task in many cases, and for an adequate supply of heat more fuel was required because too much of the heat was blocked in the furnace casing.

The present system of warm air heating with every aid being given to the air-flow has changed this. Streamlining is very effective in cutting out energy for which we have no use.

In any system where a flow is required to convey heat, the less heat lost from the medium in getting to where its heat is to be delivered is a saving. The more ease in getting around a corner or into another pipe, the more will be the saving. Figure 1 is a sketch of a "fabricated" piping set. It is made up at the factory to suit some particular design. This "fabrication" will save a number of fittings and flanges, reduce the labor, and prove as strong as the reducing tee, the lateral, the elbow, and the offset. The idea here is mainly for simplicity and strength. The fact is it is streamlined.

In Figure 2 we come a little closer to streamlining.



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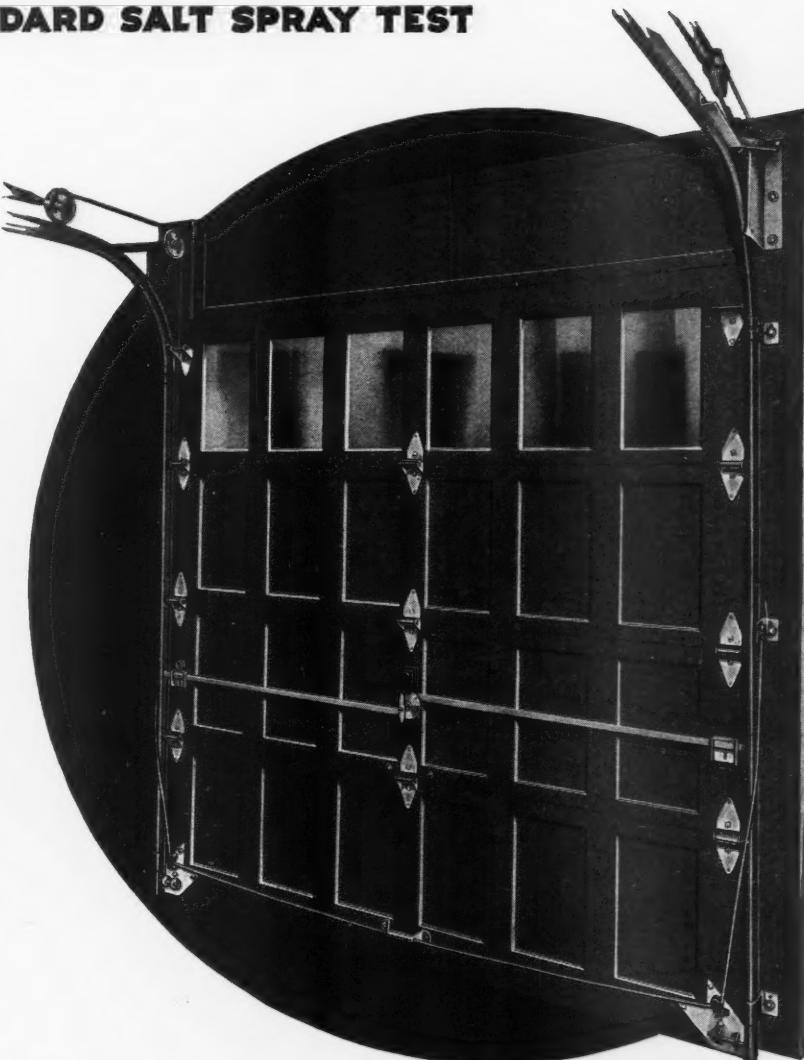
The "OVERHEAD DOOR" originated the idea of a door that occupied no valuable space, closed tightly, opened or closed freely and obviated the need of constant care or frequent replacement.

The "OVERHEAD DOOR" designed and constructed the metal parts such as tracks, hinge and roller combination, pulleys and hardware from the best available steel. RUST was the ONLY problem.

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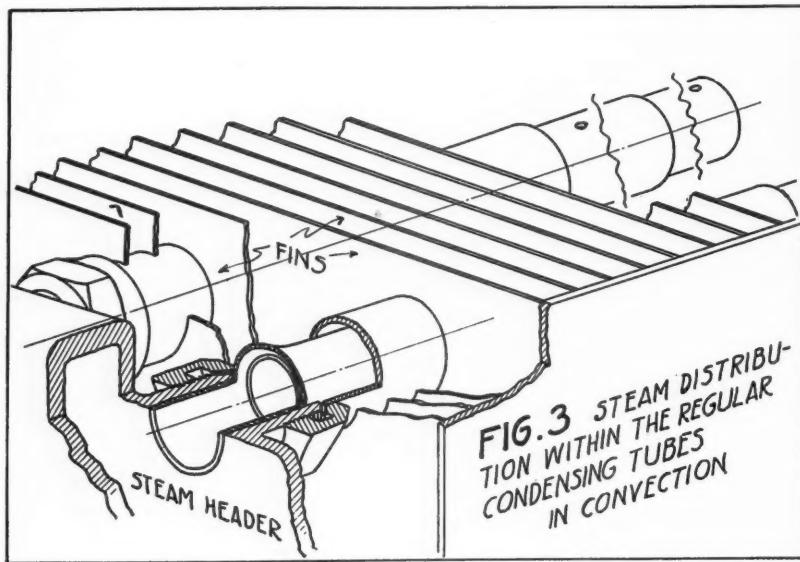
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AB237

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MECHANICAL EQUIPMENT FOR 20-YEAR FINANCED HOUSES



Whenever a fitting is introduced there is a likelihood of edges or shoulders and perhaps some abrupt turns to interrupt the flow. Modern fittings are far ahead of the older designs in eliminating these faults. But in adapting the fittings to their use in copper piping the type shown has proven effective. Copper piping is strong. It has been difficult for me to think of copper except as tubing because it has the advantages of tubing in that it can be led this way and that, especially in residential work, without the necessity of extra fittings. I think that must be why these house-doctors, the plumbers, like to discover a leak in the water pipe under the front lawn. Then they can recommend copper tubing and, attaching it suitably, they will pull it through and out of the soil much as they would an unbreakable fish-worm.

The two fittings in Figure 2, after being joined and soldered to the pipe ends, provide a smooth flow and joints that are said to be even stronger than the pipe itself.

In Figure 3 a sketch is shown of a rather new idea in steam distribution. The handling of steam is a constant study among engineers. The distribution of steam is an important phase of design when the improvement of heat exchange comes up. To go back a ways, the ordinary type of radiator will take steam at a little above atmospheric pressure and ordinarily condense a quarter of a pound per hour per square foot of radiator surface. By increasing the rate of heat transfer from within the radiator and providing fins which amplify the heat radiating areas, and then providing for increased air flow through the fins, the convector type of heater is developed. When the flow of air currents is used to relieve the heated surfaces and provide heat for the room there is an increase in the proportion of steam condensed. Or, another way of saying it would be, smaller units for heat exchange may be used when heat is conveyed from the unit to the room.

But with the proportionate increase in condensation an improvement is welcome when it has to do with providing a better balanced steam distribution. And that is what this new design is intended for. There are steam distributing tubes inside the regular condensing tubes.

With the improvement in flow, streamlining, in cases of all mediums there has been a reduction in sizes for given capacities. Just as the automobile motor has been remarkably lessened in size for given horsepowers, so have heating and cooling units and conditioning units been reduced in size for given capacities. While it is more

than noticeable in the modern radiator, the convectors go further. As capacities increase greatly for given sizes, there is a chance of streamlining the layout of a room, for instance. Instead of occupying floor space within the walls, radiator or convector can be placed back of the wall surface. If it is well done there is good reason to suppose that the efficiency of the unit will be increased because the air currents over the radiator will be streamlined.

Figure 4 is shown as a sort of example. A large hotel room with its transient guests is usually in for fairly rough treatment compared to a room in a home. Yet many hotels have pushed ahead in the field in air conditioning. The rooms are liable to any treatment in the way of individual likes and dislikes in air conditions, to tobacco smoke, food odors, etc. Compared to a room in a home we repeat a conditioning unit would have its work cut out. The unit shown in Figure 4 seems to have carried on without any difficulty, is streamlined into small space for its capacity, and is even quite modernistic in design.

When it comes to a question of streamlining the study of fans and blowers takes a front place. The sketches, Figures 5, 6, and 7, are meant to point to some of the improvements in home comfort when it comes to the service of fans. For some time it has been well known

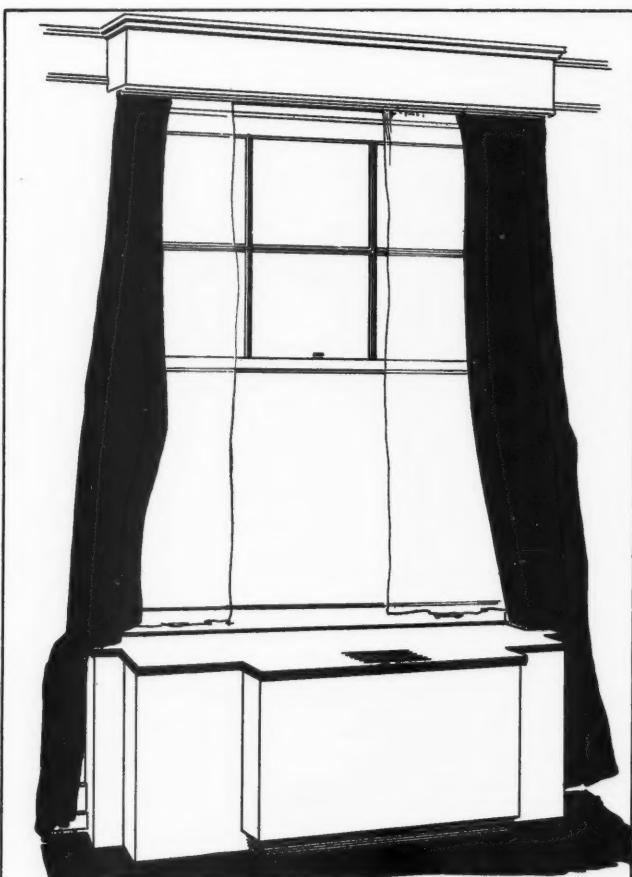


FIG. 4. AN INDIVIDUAL AIR CONDITIONING AS USED IN A HOTEL ROOM. THIS IS SERVED FROM A CENTRAL SYSTEM.

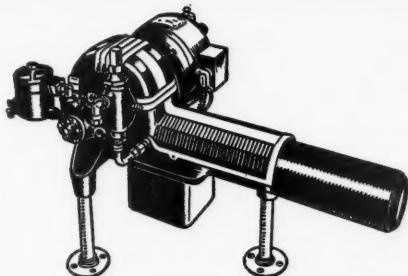
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Norge is years ahead in home heating equipment. Home heating costs can be cut as much as 50%—service calls practically eliminated when a Norge Fine-Air Conditioning Furnace is installed. First cost, also, is amazingly low for this modern heating and air-conditioning plant.

These are broad claims, but tests prove that Norge *under-rates* its new heating equipment—as thousands of satisfied owners will agree. Investigate Norge home heating equipment today—it presents the biggest opportunity in years!

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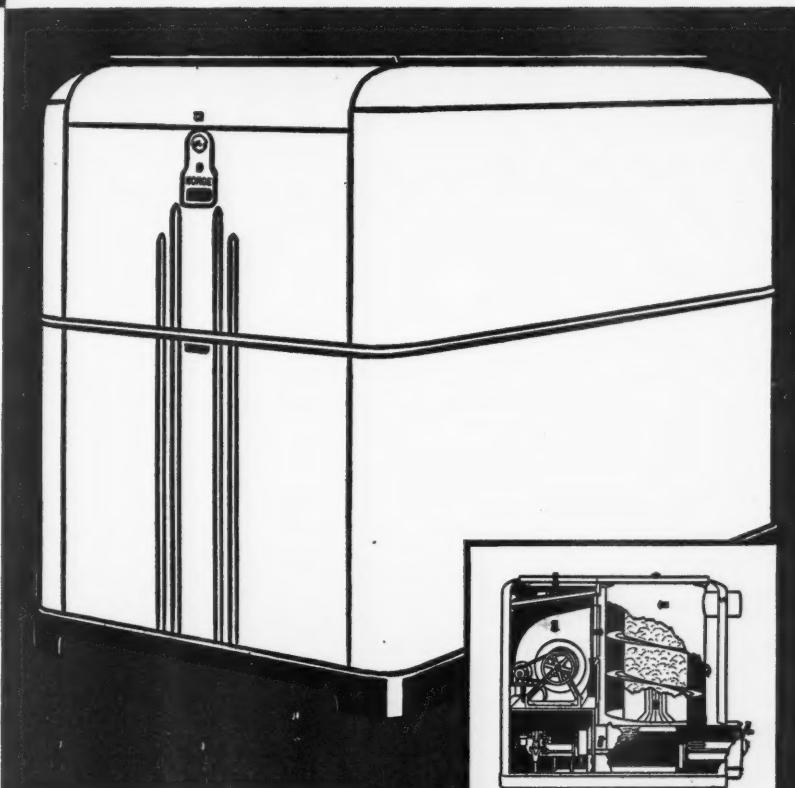
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Gives uniform heat, more heat, cleaner heat from cheaper coal. Eliminates smoke, soot and ashes because it burns fuel perfectly. Gears are made by Borg-Warner experts.

**Builders, as well as owners,
are insisting on the
Norge Fine-Air Conditioning
Furnace after they learn
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**CUTS HEATING COSTS
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HEATING-AIR CONDITIONING-PLUMBING AND WIRING

that in summer cooling, one of the most satisfactory first-steps is to use an exhaust fan in the attic during the night in order to exhaust the house of the accumulated heat and let it be replaced by the cooler night air from outside. Here we have a call for a quiet, highly efficient fan. The one shown in Figure 5 is well balanced and is designed to avoid the faults of the older designs wherein tip speeds and blade forms were such as to give very different velocities at different distances from the spindle.

Figure 6 is used to show that fans are specially designed for special services. In order to distribute the air at more uniform rates over the fin surfaces of convectors in unit heaters, thereby increasing condensation rates, we have an entirely different blade form. Besides this the blades are adjustable in pitch.

One more last crack at "streamlining." While streamlining may suggest to us that its first office is to increase or ease the flow, it isn't much of a step to realize that this easing of the flow allows us to take advantage of factors that were previously beyond use.

It has been mentioned here that some loose claims have been made for humidification because it was supposed to reduce fuel bills materially. But since it requires heat to procure added moisture content for the air, no direct claim can be made on humidity, generally speaking, in the way of fuel economy. So far as a heating plant is concerned the efficiency is the measure of fuel heat that doesn't go up the flue. That is where very reasonable claims are made for those units which obtain low temperatures in their flue-gases. But not all units can come to low flue-gas temperatures. On the other hand the gases going to the stack may be made to give up some of their heat.

A well-remembered house of my early days had a polished pipe running up through drums in the floors and ceilings of the library and a bedroom above, which acted as a by-pass for flue gases. This was merely another version of the very long stove pipe so popular with the coal heaters in the village stores. The point is

to use the heat in some way.

Streamlining then, besides easing the flow, aims to make use of the flow in every way. Figure 7 shows a means of using the heat from the flue gases to provide for vaporization. In supporting the humidity and releasing heat from the flue gases for this purpose this device does its share in the work of streamlining.

Even if we are not all artists we can appreciate streamlining because we know of its effectiveness. And I suspect we have much better reason to appreciate it than do those who value it for art's sake.

* * *

Air Conditioning With Steam and Hot Water Heat Improved

RECENT developments have made it possible to combine winter air conditioning with automatic steam and hot water heating, thus permitting the home-owner to enjoy the advantages of an even distribution of heat as well as cleaned and humidified air, according to the Plumbing and Heating Industries Bureau.

To provide the utmost flexibility and responsiveness, the heating equipment is separate from that which supplies humidity, ventilation, and air cleaning.

Heating is accomplished by means of radiators, either free-standing, concealed or recessed, as preferred by the owner. Located under the windows, they meet the cold where it enters, thus providing efficiency and economy in heating.

Air conditioning is provided by a separate unit mounted under the basement ceiling which, separately controlled, washes or filters the air and furnishes the required amount of humidity.

Accurate control of heat distribution is obtained in the case of hot water by means of a pump regulated by the thermostat, and in the case of steam, by means of the vapo-orifice system consisting of special control valves on each radiator to insure a uniform flow of steam throughout the house.

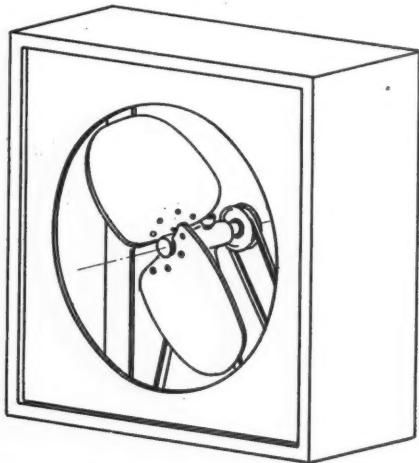


FIG. 5
AN ATTIC EXHAUST FAN
DESIGNED FOR GREAT
CAPACITY. AN EFFICIENT
SUMMER COOLING MEDIUM.

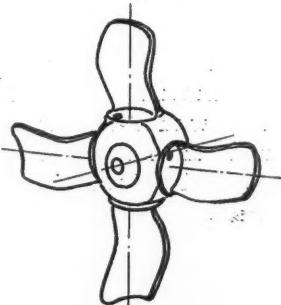


FIG. 6 A FAN BLADE
WITH A VARIABLE PITCH.
SPECIALLY BUILT TO INCREASE
CONDENSATION IN UNIT HEATERS.

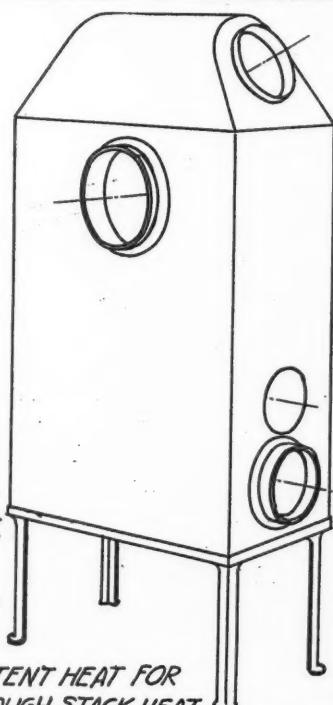


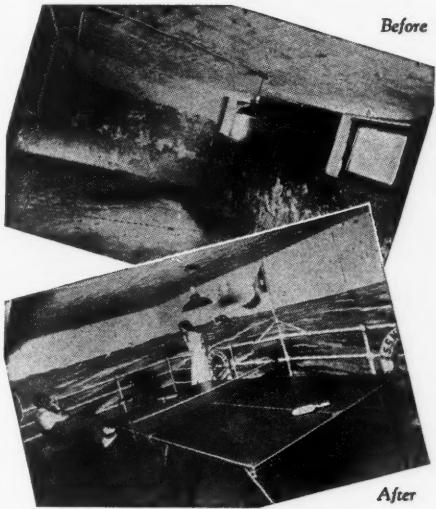
FIG. 7
HEAT EXCHANGER
WHICH PROVIDES LATENT HEAT FOR
HUMIDIFICATION THROUGH STACK HEAT.

FREE!
WE PAY
PAINTING COSTS
FOR
CONTEST WINNERS

in "Better Homes & Gardens" 1937
\$5000 Contest for Remodeling and New
Building, if they use Bondex or Modex.

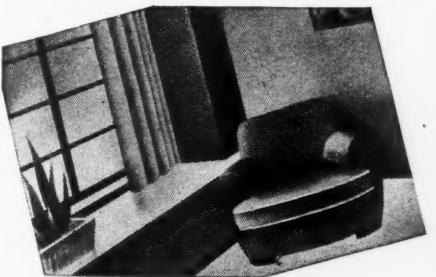
Every cent you pay for paint and labor will be refunded if you use Bondex or Modex, or both. Just keep your painting bills and mail them to us when your name is announced as a cash winner. Read the suggestions below.

Leaky Basement Becomes Play Room
with BONDEX Waterproof Cement Paint



One treatment of Bondex waterproofs damp walls forever—gives you an extra play room like this. Weatherproofs and renews stucco homes, too! White and 16 colors.

Modernize Walls and Ceilings with
MODEX Powder Casein Paint



The trend is to warm, rich, velvety casein paints—washable and practical. Being a powder, Modex gives all the advantages of casein paint at lowest cost. White, black, and 12 colors.

Plan to use both BONDEX and MODEX—then when you win, your painting costs you nothing.

Advertisement Appearing in Better Homes & Gardens

THOUSANDS OF HOME BUILDERS NEED BONDEX AND MODEX TO WIN

Unusual Advertising Idea Ties Products Up with
"Better Homes & Gardens"
\$5000 Contest for Building and Remodeling

The success of "Better Homes & Gardens" previous contest for building new homes and remodeling old ones is well known in the industry. For 1937, a new contest, wider in scope and offering substantially larger cash prizes, is now under way.

Amazing Offer to Contestants Using Bondex and Modex

As explained in the advertisement reproduced at the left of this page, any contestant using Bondex or Modex (or both) and winning a cash prize will be refunded full cost of material and labor. Not only will this offer be announced and repeated frequently in the pages of Better Homes & Gardens but every person entering the 1937 contest will receive a special folder giving full particulars and showing exactly where and how Bondex and Modex may be used in building and remodeling.

50,000 to 100,000 Paint Buyers Will be Reached

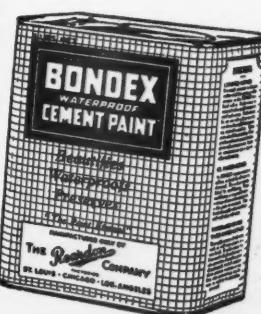
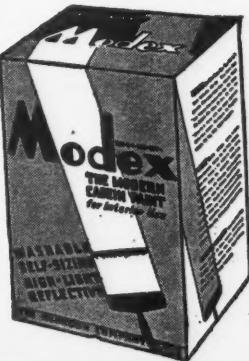
Based on the number of entries obtained in the previous contest (in which, incidentally, the major cash prize winner used Bondex), 1937 will bring in from 50,000 to 100,000 homeowners' entries. Each one of these will be more interested in Bondex and Modex than any other paint products on the market. Architects, builders, and painting contractors will be bombarded with questions about Bondex—the waterproof cement paint—and Modex—the modern casein paint in powder form. These two Reardon's products will be the "big news" in 1937 for the 1,500,000 readers of Better Homes & Gardens and their friends.

Send for Latest Folders on BONDEX and MODEX

All you need to know about Bondex and Modex is interestingly presented in two illustrated folders recently off the press. Send for them both today and be posted. Address

THE REARDON CO.

2200 N. 2nd, St. Louis, Mo.
Los Angeles • Chicago



Reardon's BONDEX • MODEX

PRACTICAL JOB POINTERS

A READERS' EXCHANGE of tested ideas and methods, taken from their own building experience. Two dollars or a year's subscription to American Builder is paid for each item when published. State business connection or trade.

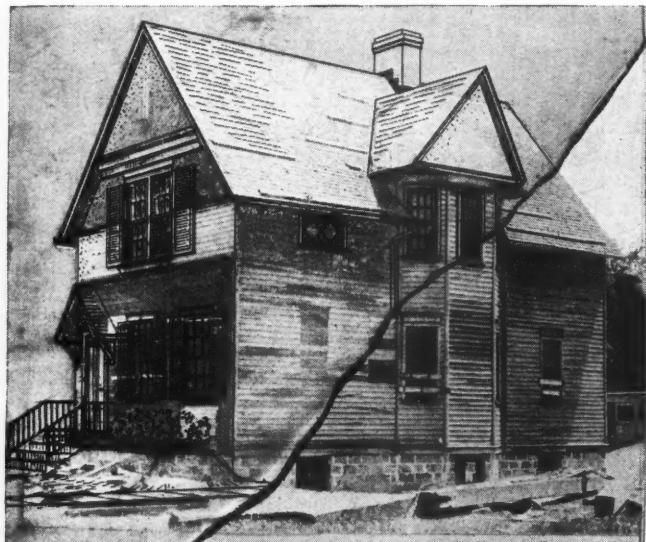
Snapshop Method of Preparing Modernizing Sketch

IF A HOME owner can be shown a sketch indicating how his house would look after remodeling, a desire is created and a contract often results. A perspective view will most clearly indicate the proposed changes.

The cheapest and quickest way to prepare this sketch is to take a small snapshot of the house and have an 8" x 10" enlargement made from the negative; most film services will do this for less than a dollar. Then lay a sheet of tracing paper over the enlargement and trace from it such outlines of the structure as will not be altered. Finally, sketch in the changes necessary to modernize the building.

The rough tracing sketch, shown below and partly torn away (at the black line) to expose the enlarged "before" photo underneath, took just a short time to make. The other illustration shows how the house looked after the changes indicated on the sketch had been completed. The comparative size of the two illustrations indicates the relative proportion of a photo 6" x 4 1/4" to an 8" x 10" enlargement.

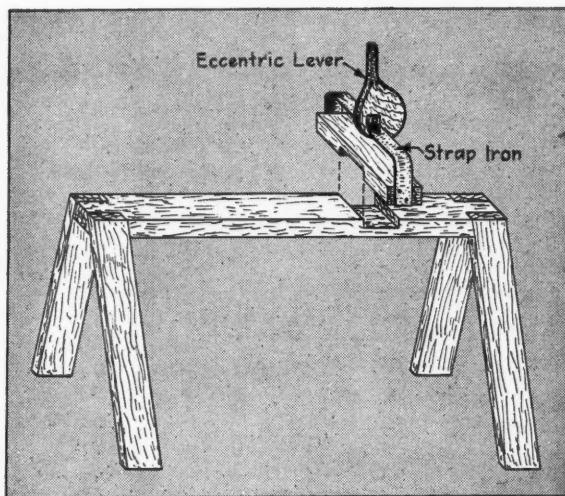
Local contractors can afford to make such sketches for any prospective client, and will find this method both simple and inexpensive.—J. K. TULLY, Chicago, Ill.



ABOVE: Enlarged snapshot of a house which is to be modernized serves as a guide to making a tracing sketch of proposed changes. (Tracing is torn away at the black line to show "before" view underneath.) Left: "after" photo of same house with changes made.

Simple Vise for Sawhorse

A DEVICE which firmly grips and holds stock up to two inches in thickness on a sawhorse is shown in the drawing. The eccentric clamping lever is attached with strap iron brackets. One carpenter describes this practical time-and-labor saver as a third arm and hand.—PAUL H. SMITH, Charlestown, Mass.



QUICK-ACTING Clamp holds stock on sawhorse.

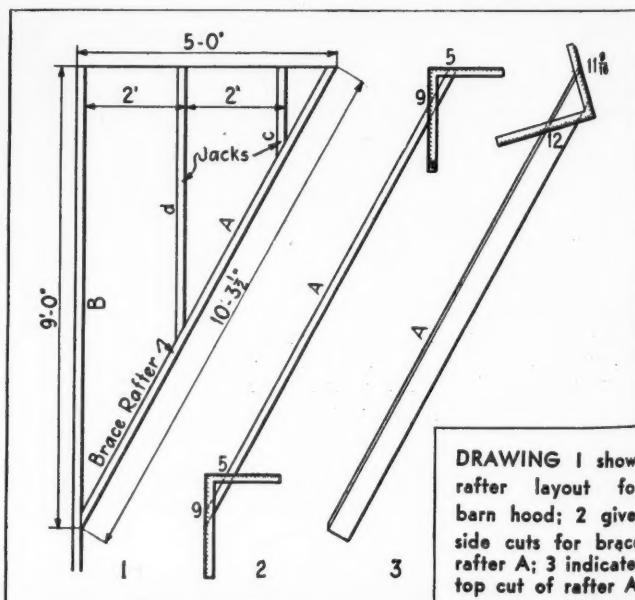
Framing the Barn Hood

I AM SUBMITTING a method to frame the barn hood where the top edge of brace rafter is on a level plane with the common rafters. As the sheathing must help hold the hood, this makes a better place to nail sheathing than if this brace rafter were kept vertical. This method will work on any size hood, any angle and any pitch roof. I will give an example of a 5 foot projection with brace rafter starting 9 feet down from ridge on the common rafter, the roof having a pitch of 10 to 12.

To find length of rafter A in Drawing 1 below, the diagonal of 5 and 9 = 10' 3 1/2". To get side cuts use 5 and 9, as shown in Drawing 2. Drawing 3 shows cuts on flat side of rafter A. Lower end is square. To find the top cut, instead of using 10 and 12 (as would be used to cut common rafter), use a number as much larger than 10 than rafter A is longer than rafter B.

Thus, the proportion ($10:x = 9:10'3\frac{1}{2}"$) gives x equal to 11 9/16" which is the figure to use for top end cut.

Jack c is $\frac{1}{2}$ as long as rafter B. Jack d is $\frac{1}{2}$ as long as rafter B. The top cuts for these jacks are the same as for common rafter; the bottom is square with a side using 5 and 9, cut on 9.—S. PAUL SCHROCK, Carpenter, Shelbyville, Ill.



DRAWING 1 shows rafter layout for barn hood; 2 gives side cuts for brace rafter A; 3 indicates top cut of rafter A.

REASONS WHY

TRIPLE-INSULATED HOUSES APPEAL TO MORE HOME BUYERS

1 FIREPROOF ROOF . . .

made of J-M ASBESTOS SHINGLES . . . will not rot or wear out. Lifetime protection. Beautiful styles and colors.



2 MAINTENANCE- FREE SIDING . . .

made of permanent J-M CEDARGRAIN ASBESTOS SHINGLES . . . beautiful, cannot burn or rot. Never need paint to preserve them.

(Illustrated, the new Shake texture.)



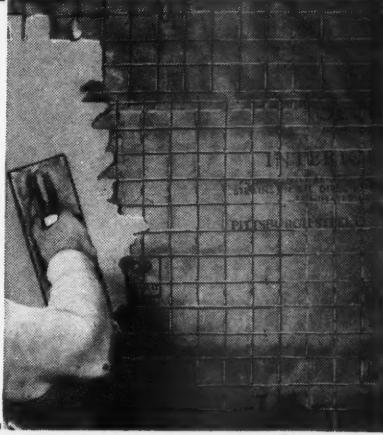
3 ALL-WEATHER COMFORT . . .

Attic and walls insulated with Ful-Thik Super Batts of J-M Rock Wool. Maximum comfort and fuel savings.



4 REINFORCED PLASTER . . .

over J-M STEELTEX . . . reduces plaster cracking to a minimum. Gives added strength and fire resistance.



**AND—the J-M Triple-Insulated House program
enables you to show these advantages to the people
of your city—helps your builders sell houses!**

IN 1936, more than half a million people inspected Triple-Insulated houses built by leading builders and sponsored by J-M Dealers in 57 locations! Thousands of active prospects were developed . . . and their interest was turned into many more thousands of dollars in new busi-

ness for these builders and their dealers. This year, the Johns-Manville Triple-Insulated House program is sure to prove even more valuable to alert, reputable builders. Requirements have been simplified, delays eliminated.

This entire program is all set . . .

ready to go to work for you. Get full details at once. See how Johns-Manville's *local* advertising and promotional support will attract prospects to your model-house project . . . how it will help your builders sell by showing these prospects the advantages of Triple-Insulation and the extra values built into their houses through the use of J-M quality materials. Ask your Johns-Manville Representative for further information, or use the coupon.

JOHNS-MANVILLE
BUILDING MATERIALS

ASBESTOS ROOFING AND SIDING SHINGLES; ASPHALT SHINGLES;
DECORATIVE ASBESTOS WALL BOARDS; INSULATING BOARDS;
HOME INSULATION; STEELTEX, ETC.

JOHNS-MANVILLE, 22 East 40th Street, New York City
Send me full details of your new Triple-Insulated House Program.

Name. _____

Organization. _____

Address. _____

City. _____ State. _____

AB-2-37

SHOPCRAFTER'S Corner

Things To Build for Profit or Pleasure

THE popularity of ping-pong, or table tennis, as it is frequently called, has been increasing in recent years until it has now reached a point where it is a major indoor sport. On this page, details are given for building the most important piece of equipment for the game—the ping-pong table. Inasmuch as they are rather expensive to buy, the tables make good projects to build for use or sale; a few dollars will purchase the remaining playing equipment at retail or sporting goods stores.

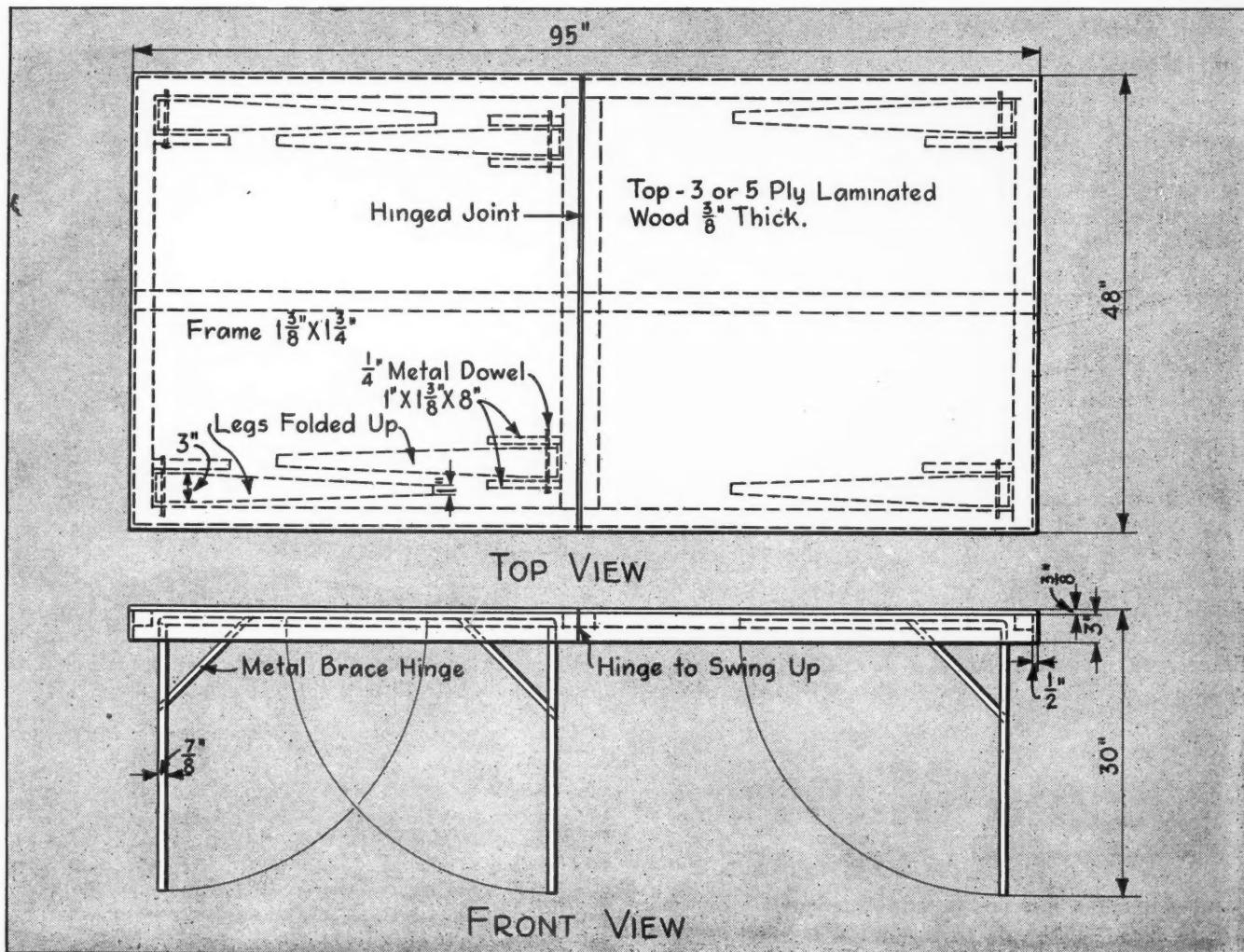
Since the top size is 4 x 9 feet, it is made to fold in the middle and has legs which swing up against the underside for convenient storage when not in use. The game is a year 'round recreation but is naturally more popular in winter. However, the table can be used for other purposes, such as being taken into the yard for summer garden parties or set up anywhere in the house where a large work surface is needed for sewing, etc.

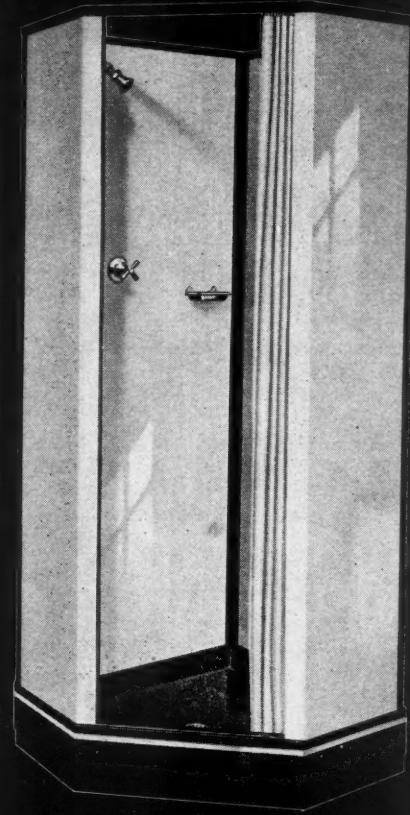
CONSTRUCTION drawings and bill of material for a ping-pong or indoor tennis table. Design from "Things to Make for the Camp and Game-Room" by William W. Klenke—Manual Arts Press.

Material is readily available; sizes and quantities are given in the accompanying list. The top should be faced with a fairly hard wood to withstand use; 3-ply or 5-ply stock is recommended; the latter in $\frac{3}{4}$ -inch thickness is used on professional tables. The drawings below show how to lay out the project.

BILL OF MATERIAL

- 2 pcs, Top, $\frac{3}{8}$ " x 48" x $47\frac{1}{2}$ ", 3-ply or 5-ply laminated stock
- 6 pcs, Legs, $\frac{7}{8}$ " x 3" x 29"
- 10 pcs, Framework, under the top, $1\frac{3}{8}$ " x $1\frac{3}{4}$ " x 48"
- 8 pcs, For the legs to swing on, 1" x $1\frac{3}{8}$ " x 8"
- 6 pcs, Outside apron, $\frac{1}{2}$ " x 3" x 48"
- 6 Metal braces, for the legs
- 6 pcs, Dowels, for the legs, $\frac{1}{4}$ " diam., metal rod





The Weisway Standard corner entrance style is one of seven models available suiting every requirement in the simplest cottages or the most luxurious homes, as well as in institutions and commercial buildings.



FOOT-GRIP, NO-SLIP FLOOR

This exclusive patented feature of the Weisway brings new safety and sure-footed comfort to shower bathing—a strong selling feature. The Weisway vitreous porcelain receptor is light in weight, staunchly built and leakproof, sanitary, soundless as the tread of a bare foot.

Your Master Plumber
Sells and Installs
Weisway Cabinet Showers

"—and This Bath is a GUARANTEED LEAKPROOF SHOWER"

● No more falling plaster—no more ruined decorations—no more costly repair bills—no more of the "grief" which has been associated with even costliest methods of built-in showers need to be tolerated.



Weisway cabinet showers are guaranteed permanently leakproof—bring a new sense of comfort and luxury to shower bathing—and make a complete extra bath possible in space three feet square, or less!

Consider the strong sales appeal of such a leakproof extra bath—now possible in every house you build. Weisway cabinet showers are complete, self-contained baths...easily, quickly installed without special treatment of building walls or floor. Vitreous porcelain receptor has exclusive (patented) Foot-Grip, No-Slip floor, equally safe wet or dry. Walls are vitreous porcelain or baked enamel.

Weisway Cabinet Showers are one of the big developments in modern building—get all the facts about their possibilities in every type building. Mail coupon now.

WEISWAY
Cabinet Showers

HENRY WEIS MANUFACTURING COMPANY, INC.
Cabinet Shower Division, 201 OAK STREET, ELKHART, INDIANA

Gentlemen: Without obligation to me please send detailed information on
Weisway cabinet showers—and particularly their application to remodeling
 new homes clubs, hotels, institutions industrial buildings.

Name _____

Street _____

City _____

State _____

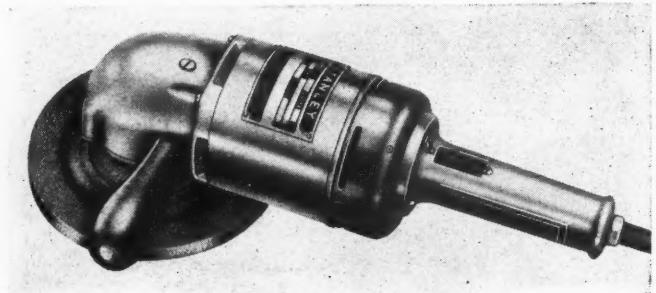
NEW PRODUCTS

FOR INFORMATION ABOUT any new product
write American Builder Information Exchange
105 West Adams Street, Chicago, Ill.

Electric Disc Sander

THE new Stanley No. 77 electric disc sander made by the Stanley Works, New Britain, Conn., is a rugged, powerful tool designed and built for production and repair work. It is ball bearing equipped throughout, sturdily constructed, streamlined for use in close places, light in weight and exceptionally easy to handle, and has a high speed universal motor enclosed in a strong aluminum alloy housing. It is furnished complete with a 7-inch flexible pad, 12 sanding discs (6 for metal and 6 for wood), wrenches, and a heavy rubber covered 3 conductor cable.

Equipped with available accessories the sander is a versatile tool and can be used to scour and clean vats, polish metal pipes, remove labels and stencils, sand wood and metal, remove paint and rust, rub and polish lacquered surfaces, grind heavy welds, resurface desks, smooth concrete, limestone and similar materials, and to smooth castings, auto fenders, etc., before and after filler is applied.



NEW Disc Sander has many uses.

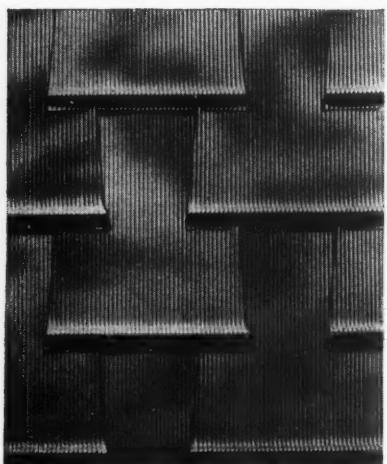
Corrugated Copper Shingles

A COPPER shingle whose surface is heavily corrugated with patented lines running the length of the shingle has been perfected by The New Haven Copper Co., Seymour, Conn.

The corrugations take up the expansion and contraction of the shingle, thus insuring that it will always stay tightly nailed down to the roof. This type of shingle expands and contracts within itself. The coldest weather cannot crack or harm this roofing in any way. Being of solid copper, it is completely fireproof. When properly grounded, Kenmar shingles afford an ideal protection against lightning. These scientifically built, corrugated, tapered shingles are designed with a transverse stiffening corrugation or roll, giving a thick butted effect which throws shadow lines, and further intensifies their permanence and attractiveness. These thick butts also adequately serve as snow guards in winter. Kenmar shingles are available in four colors—bright copper, copper brown, copper green, and lead coated.

Copper shingles can

SECTION of roof covered with Kenmar corrugated copper shingles.



be used to excellent advantage on any pitched roof area having more than a slope of 5 inch rise per foot of horizontal run. They cannot be used, however, for slopes flatter than 4 inches per foot. The cost of shingles of this type is approximately the same as the cost of a good grade of slate shingles; Kenmar shingles are, however, one-fourth the weight of slate shingles and about one-half the weight of wood shingles. Figured per year of service, Kenmar shingles are the most economical roofing that money can buy. It is both easy and economical to re-roof with copper right over the old wood or composition shingles which serve as insulation.

Norge Shows 1937 Home Appliances

THE first public showing of the 1937 line of Norge home appliances is now being made by Norge Division Borg-Warner Corporation in a series of regional distributor meetings throughout the country. Manufacturing attention has centered upon producing greater use-value, beauty, and economy in every product of the line. Some of the highlights of the line are listed as follows:

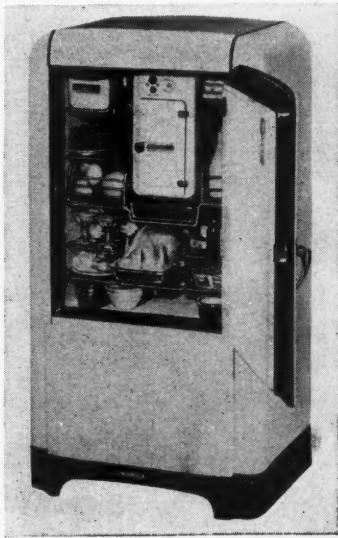
Low-Temp Refrigerator: These refrigerators maintain temperatures under 40 degrees, instead of the usual 50 degrees, with higher humidity in the food compartment, permitting storage of perishable foods in their original prime freshness for periods from two to five times longer. Powered with the Rollator compressor, Low-Temp models require no more current than regular electric refrigeration. Two models comprise the line, one large double-door model of 12 cu. ft. capacity, and one 8 cu. ft. model.

Gas Electric: The new 7.54 cu. ft. model Norge gasoline-electric Rollator refrigerator is designed primarily for rural homes, and is powered with a gasoline motor-generator that can be located as far away as 300 feet. Enough electricity is generated to operate, in addition to the refrigerator, a Norge washer, other appliances, and electric lights.

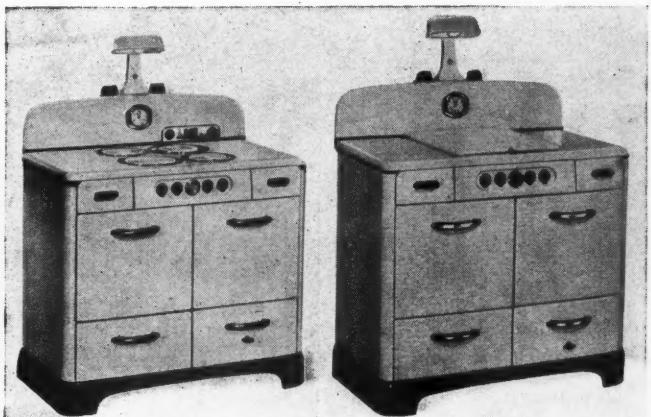
DeLuxe Line: Five models make up the Norge DeLuxe series, ranging in storage capacity from 4.25 cu. ft. to 8.08 cu. ft., the top four being available in either porcelain or Norgloss exteriors. In addition to the standard black and white models, the 5 and 6 cu. ft. DeLuxe refrigerators are available in mother-of-pearl, tan and green finish.

Standard Line: Completely new in design and beauty are two all-white, Norgloss finish refrigerators, and one sink type refriger-

(Continued to page 96)

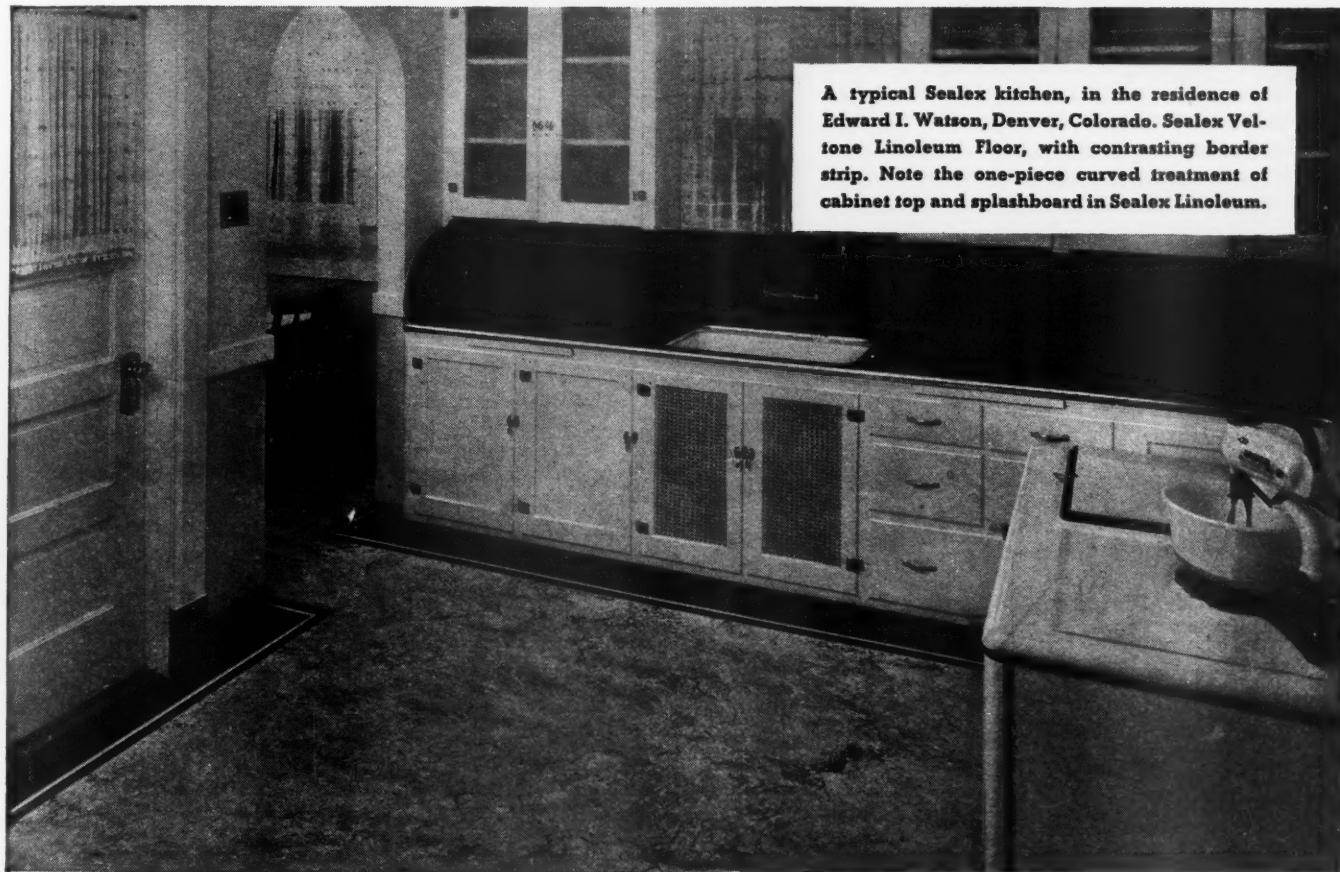


1937 Model Norge refrigerator

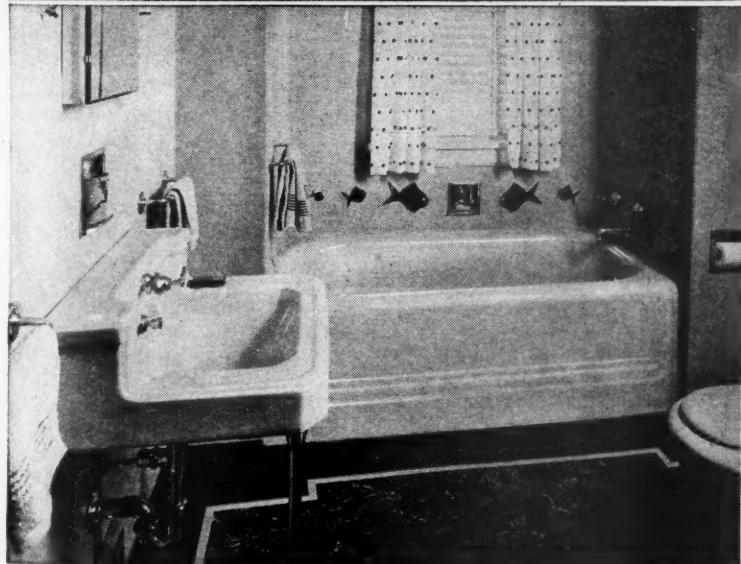


RANGES designed for combination with Norge refrigerators.

For low-cost homes with high-style rooms ... SEALEX floors and walls



A typical Sealex kitchen, in the residence of Edward I. Watson, Denver, Colorado. Sealex Veltone Linoleum Floor, with contrasting border strip. Note the one-piece curved treatment of cabinet top and splashboard in Sealex Linoleum.



Another Sealex Veltone Floor distinguishes the bathroom in this home. The walls, of Sealex Wall-Covering, meet the floor in a sanitary one-piece cove base and border that makes cleaning easy. Notice how specially-cut linoleum designs individualize the Sealex Wall above the tub.

Style your houses to sell. Sealex Linoleum Floors and Wall-Coverings provide, at very moderate cost, the permanency and beauty that home-buyers demand today.

In both Sealex Floors and Walls, there is no end to the variety of distinctive effects possible. The wide array of patterns is styled to the times in design and color. And remember, any individual effect you wish can be carried out in specially-cut Sealex materials.

Sealex Floors, especially in the kitchen and bath, will catch the eye of your women buyers. Sealex Wall-Covering provides a permanent, washable wall treatment that is far less expensive than tiling. Your prospects will also appreciate the smooth, sanitary surface of Sealex materials—so easy to keep clean.

Capable contractors will install Sealex Floors and Walls in accordance with manufacturer's specifications, to your complete satisfaction. Write for details on Sealex materials.

CONGOLEUM-NAIRN INC. KEARNY, N. J.

SEALEX linoleum floors and wall-coverings

Trademark Registered

MR. BUILDER: Plan Now to Install



On ALL Your Jobs



Because: • **MetaLane Weatherstrip, unlike brass, bronze, copper and zinc, will not tarnish, oxidize or corrode.** • There is no weatherstrip as efficient or as modern. • **MetaLane Weatherstrip can be easily and quickly applied by any carpenter in your employ—no special tools are required.** • Its smart, permanent, silvery finish makes a modern, neat installation. • **MetaLane Weatherstrip can be bought from your lumber dealer in handy packages, complete with nails and accessories.**

Apply Monarch MetaLane Weatherstrip in the homes you build for the same reason that you apply hardware—and keep your own men employed. • **MetaLane Weatherstrip is stocked by lumber dealers.** If your lumber dealer has not yet stocked it, write us direct for literature and samples, giving us the name of your lumber dealer.

MetaLane Weatherstrip for doors, windows and casements is packed in sets of correct sizes, in individual, handy cartons for simplified handling and installation.

Monarch Products have been the standard of comparison throughout the world for a third of a century.

MONARCH WEATHERSTRIP CORP.
Please send me literature and samples of MetaLane Weatherstrip.
NAME _____
ADDRESS _____
CITY _____
YOUR DEALER _____

MONARCH METAL WEATHERSTRIP CORP.
6333 Etzel Avenue, St. Louis, Mo.

(Continued from page 94)

erator with black base, which comprise the standard Norge Rollator refrigerator line.

Norge Concentrator Gas Range: Centrally located burners, new gas saving oven temperature regulator, colored hardware, automatic electric oven food light, and Simmer-Concentrator burners are featured in the improved 1937 gas ranges. Exterior design has been harmonized even more closely with the Norge Rollator refrigerator, providing a matchless kitchen combination. The rigid steel construction that characterized previous Norge ranges is continued in the 1937 line. Nine models, with various color combinations and special features, comprise the 1937 line.

Electric Ranges: Norge electric ranges are designed in matched combination with Rollator refrigerators. Six models are in the line, ranging from the DeLuxe ER-40-61 with centrally located cooking elements, to the compact, three-burner ER-20-60. New features include counter balanced oven door, preventing slamming, and making it possible to leave oven door slightly open when using the heating element for broiling; oven flood light that operates automatically when door is opened; adjustable, smokeless, dull chrome broiler pan with polished chrome grille, and extra powered heating element for broiling; Chromalox Super-Speed cooking units available as extra equipment in place of the standard open coil units; and automatic light signal on oven control.

Improved American Handy Sander

THE American Floor Surfacing Machine Company, Toledo, O., has announced an improved American Handy Sander. It is a light-weight portable machine particularly suitable for contractors.

The newly improved American Handy Sander weighs 31½ pounds complete, and is equipped with a universal type motor operated from an ordinary base plug. The frame is aluminum alloy throughout. The gears are heat-treated nickel steel and all revolving parts are provided with S. K. F. bearings packed in grease. The machine is of the simplest construction and when in operation, the full weight of the machine rests upon the six-inch drum.

The machine is equipped with a highly efficient dust collecting system and dust bag. No experience is required to operate.

HANDY, light-weight floor sander.



New Sealer Stops Grain-Raising

TO MAKE the finishing of wood and wood products easier and more economical a new, clear sealer and preservative, based on a combination of synthetic resins in a special solvent, has been introduced on the industrial market; its trade marked name is Laux Rezite Sealer and is manufactured by I. F. Laucks, Inc., Seattle, Wash.

Applied at the factory on plywood, sash and doors, millwork, etc., immediately after sanding it provides an economical, ready-primed surface for quick, easy, beautiful decoration. Its chief virtue is the prevention of grain-raising, the most difficult obstacle in the painting, enameling, lacquering or staining of woods, particularly in the soft-wood classification. By preventing grain-raising, especially in the presence of moisture, and by priming and sealing the surface, it makes it possible to decorate woods so treated with a minimum of coats and hand sanding.

Laux Rezite Sealer was developed especially for the fir plywood industry, but it adheres to all paintable surfaces, which include not only wood but canvas, paper, fabrics, metal, brick and cement. Because of its quick drying feature it is especially suited to factory use and may be applied by brushing, dipping, spraying, or by special spreaders. In addition to preventing grain raising and making a sealed, primed surface for all kinds of decoration, it also decreases moisture absorption, prevents decay, and diminishes surface checking in woods.

BASEMENT GAME ROOMS MAKE PROSPECTS SAY "YES"



The colorful floor of this basement den is Armstrong's Accotile in alternate tiles of Tan Marble No. 325 and Clay Brown No. 330. Rooms like this speed up sales.

Rooms like this are inexpensive when you use Accotile floors

BASEMENT game rooms are the latest "gadget" that alert builders are offering to speed up sales. A few square yards of cellar space are dressed up with an inexpensive but colorful Accotile floor—and the prospect's imagination does the rest. He sees how easily he can fit up a cozy den or a recreation room for the whole family. He signs on the dotted line—at *your* price.

Accotile is an asphaltic tile—the only type of resilient flooring that can be laid over concrete in direct contact with the ground. It is moisture-resistant, fire-resistant, and economical to install. And it is made and guaranteed by the makers of Armstrong's Linoleum.

A basement recreation room with cheerful Accotile floors may be just the extra touch that's needed to get a "white elephant" off your hands. Write now for "Gay Floors for Basement Play-rooms"—a color-illustrated folder of attractive basement floors. Armstrong Cork Products Co., Building Materials Division, 1218 State St., Lancaster, Pennsylvania.



**ARMSTRONG'S Linoleum
and RESILIENT TILE FLOORS**
LINOTILE · ACCOTILE · CORK TILE · RUBBER TILE · LINOWALL · ACOUSTICAL CEILINGS



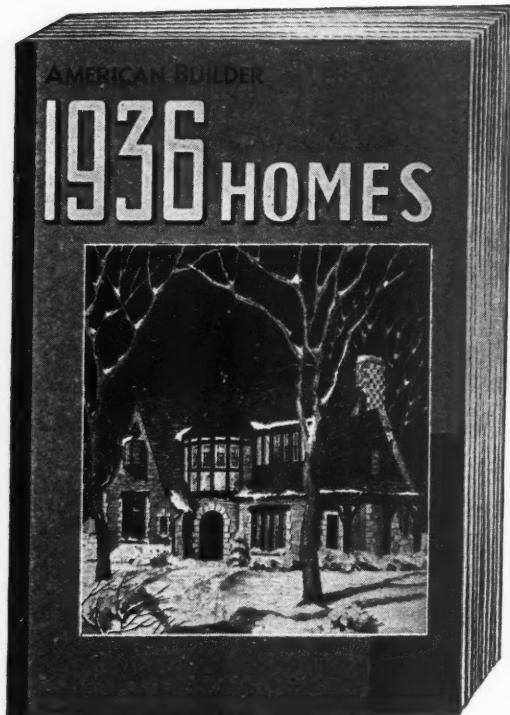
Every House Deserves The **BEST** **SASH CORD**

To equip the houses you may be planning, building or renovating with Samson Spot Sash Cord, is to insure the installation of the best sash cord you can use. It will justify your confidence in its better and longer service. It will sustain your good judgment in the minds of those for whom you build, by protecting them from the expense and annoyance so frequently occasioned by cheap cord failure.

Samson Spot Sash Cord is made of extra quality, fine, three-ply yarn, firmly braided, smoothly finished. It is guaranteed to be free from the imperfections of braid and finish which cause cheap cord to wear out so quickly. It is made in one quality which can always be identified by the Colored Spots—our trade-mark.

SAMSON CORDAGE WORKS
BOSTON, MASSACHUSETTS





Destined to be a Home Building Classic

"American Builder 1936 Homes" is of such PERMANENT usefulness that for years to come it will rank among the standard authorities of the home building industry. It will be consulted, quoted and followed as a dependable guide. No construction library will be complete without it. It will occupy a welcome place on the desks of contractors, builders and dealers everywhere.

This is because the editors of the American Builder in selecting the material to be put into this book had an eye to the fact that a considerable portion of the homes it would inspire into being would be built under FHA auspices and financed under long-term mortgages, and must therefore possess ENDURING qualities—in charm, in architectural style, in sturdiness of construction.

So you may forget that "1936" in its title—its contents leap far beyond it!

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they were planned, built and equipped*

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—Modernistic Home with corner windows—An old favorite, the Cape Cod Cottage—Midget Housing for Week End Cottages—Good little Economy Home, snug and tight, a start toward a large house later—Two Rustic Designs for Mountain, Shore or Forest Outing Cottages—Silver Star Sample House—Manhasset Model Home—Exhibit Home at Falls Church, Va.—Lancaster Realty Board Model Home—Two inexpensive New Jersey Homes—Air Conditioned Cottswold Home at Detroit—Triple Insulated Time Proof Home—Carefree Cottage, with Working Plans—Westchester County Model Home—Beautiful Kansas City Home, "high on a hill top"—A fine Connecticut House for Country Living—Well designed Cape Cod Colonial at Glen Ellyn—New York City house Restyled—Low Cost Homestead Houses—Woodsy Lodge, a 4-room Vacation Home—An old home made as good as new at half the cost—Changing an old time Bungalow into a Modern English Cottage at Kalamazoo—Third floor off, house now rented—Remodeled Tea Room attracts New Trade. And this is by no means all.

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A RIOT of New Home Building Ideas, Plans, Views and Data

"American Builder 1936 Homes," in addition to the Home Designs mentioned on the preceding page assembles a vast amount of other information, plans and suggestions for the modern home builder, as is revealed by these sub-section titles:

Interiors with a Modern Touch—Modernistic Stair Hall, Latest in Living Rooms, Kitchen Splendor, Breakfast Room in Style, Basement Recreation Room with Bar—Planning More Efficient Kitchens—Modernizing Ideas for Kitchens and Baths—New Styles in Bathrooms and Kitchens—What's New in Garage Designs—Home above Garage—Four Clever Garages—Some Striking Interiors—New Homestead Barns—Market Meat and Farm Milk Plants—Shed Roof Henney—Open Front Poultry House—Skylight Hog House—Firesafe Smoke House—How to Build a Wind-Proof Gothic Barn, with Master Material List.

Feature Articles

How to Get a Higher FHA Rating—The Cost Key System Explained—How to Get Better Homes for Less—What Can be done with a half-acre Lot—Today's Small House Requires New Methods and Materials—Today's Small House Entirely Different from the Low Cost Home of Yesterday—Planning Farm Improvements—Veneering Job Brings Happy Ending—Details of Arkansas Pine Paneling in Living Room—Remodeling with Vitreous Enamel Panels—Some airconditioning layouts—

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Compare Victor In-Bilt Ventilators with any other and you'll find they outclass the field from every standpoint. Modern styling—exclusive mechanical advantages—convenience and economy of operation—ease and simplicity of installation—combine to make them the best "buy". Two sizes—the 10" In-Bilt for the modern small kitchen, and the 12" De Luxe In-Bilt for the larger home.

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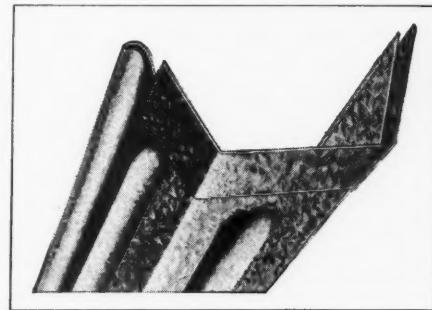
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Square Hanging Eaves Trough

AN ENTIRELY new hanging eaves trough, known as Kuehn's Gutter, is being marketed by Milcor Steel Company, Milwaukee, Wis. Installed on a building it gives a box gutter effect because of its attractive formation. Although the new trough has an entirely different appearance, its application is the same as the ordinary half-round trough. The Titelock eaves trough hanger is readily adapted to this new square gutter. The installation, therefore, can be made as easily and simply as with half-round eaves trough.

Among the outstanding features of the new Kuehn's gutter are its attractive appearance and the exceptional rigidity and strength achieved by the new design. The decorative flutings on side and bottom are among the seven reinforcing features which make the gutter far stronger, straighter, and more easily handled and worked than ordinary eaves trough. The line is complete with lap joint, slip joint, mitres, hangers, ends and drops. There is also a high back furnished for box gutter installation.



HANGING eaves trough for box gutter effect.

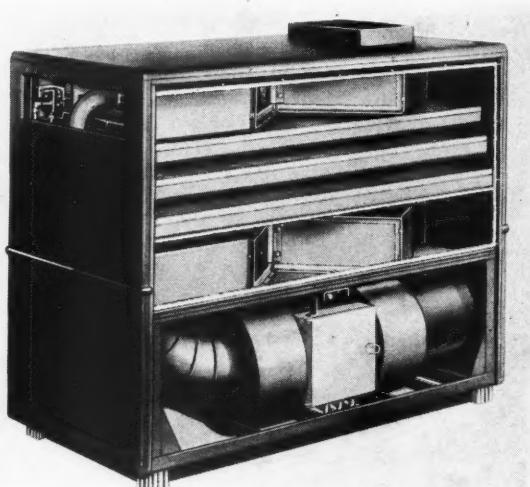
Dehumidifier for Summer Air Conditioning

THE Bryant dehumidifier, made by the Bryant Heater Company, Cleveland, O., removes moisture from air by the process of physical adsorption. With this method, the moisture carried in the air in the form of vapor (humidity) is condensed within the pores of silica gel, transforming the latent heat into sensible heat, which is subsequently removed by surface coolers. Humidity in air is thus controlled by this dehumidifier as a direct operation without resort to low temperature cooling. By its use 75 per cent of the moisture may be removed from the air. Temperature control is accomplished as a separate and distinct operation.

Designed around this principle of independent control of humidity and temperature, the time tested Bryant dehumidifier embodies all the advantages of adaptability, effectiveness and economy.

The dehumidifier consists of a sheet metal cabinet with two sets of silica gel trays, in each of two compartments, with dampers mounted between them on a vertical shaft. Two fans, driven by a single motor, are mounted below and there is a smaller motor for operating the dampers. As the dried air leaves the unit, it is

(Continued to page 102)



AIR conditioning dehumidifier of silica gel type.



BUYERS OF PAINTING *Should* KNOW

HOW TO PAINT INTERIOR WALLS AT LESS COST

 Interiors, new or old, can be beautifully decorated at a substantial saving by using Medusa-Lite, the super flat wall finish. And here's why Medusa-Lite painting costs less. This paint is thinned with water and is easily applied by brush or spray—one coat covers—to almost any interior surface including fresh plaster or concrete. It has unusual coverage, dries to the touch in 30 to 40 minutes and leaves no brush marks. Medusa-Lite is non-inflammable and cannot powder, peel or crack. These advantages mean big savings plus a beautiful, durable job in any of seven pastel shades or white.

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Use Medusa Portland Cement Paint—it gives a hard, permanent, beautiful, cement-like, moisture proof finish in white or any of seven colors.

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Use Medusa Floor Coating for interior concrete floors to get a colorful, durable, abrasion resisting, moisture proof floor in black, white or any of six colors.

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Gentlemen: Please send me a complimentary copy of the book, "How To Paint Concrete, Stucco, Masonry and Other Surfaces".

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3 1/2 S "DUAL-MIX" PNEUMATIC TIRE TRAILER:
Biggest value on market—Timken Bearings, spring mounted for speed to job, "V" bottom Dual-Mix Drum for double mixing action on the job. Outperforms, outlasts any model we've ever built.

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First choice for bridge builders and general work. Faster to trail, quicker to spot because of 2-wheel mounting, Timkens and pneumatic tires. Faster to produce because of stepped-up loading and discharge, ability to pour direct into forms.



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ADVANCED TYPE 4-WHEEL MODELS:
Jaeger latest model 7S, 10S and 14S side discharge mixers have same stepped-up action as our Speed Kings. Handle dry, sticky mixes fast. Machined steel tracks, 25% bigger engines, Man-Ten Alloy Steel for longer life.

Jaeger prices mean most for your money. Get our new Mixer Catalog, Tilters 3 1/2 S, 5S, 7S, Non-Tilts to 56S—equipped to meet any job.

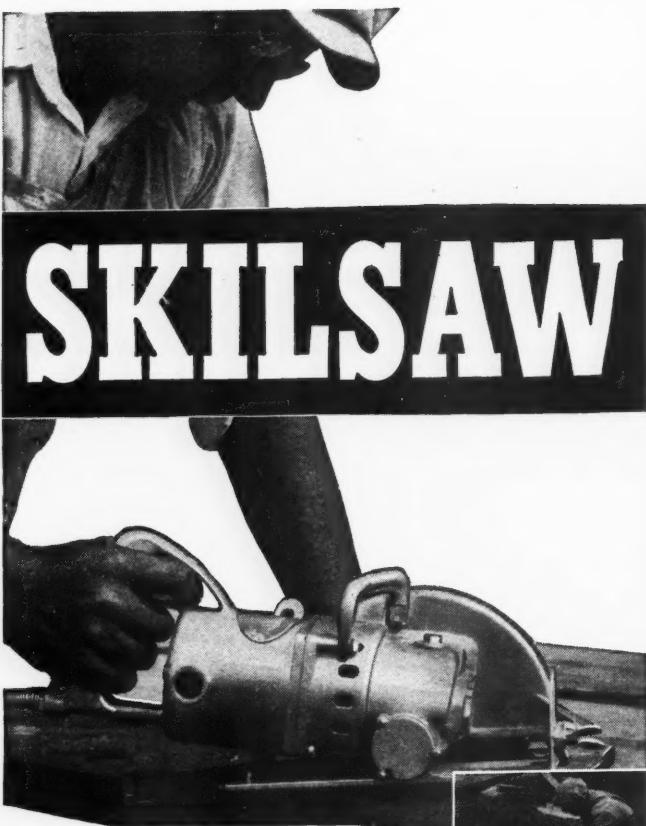
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TIMKEN SCREW THRUST
HOISTS, TOWERS,
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"SURE PRIME"
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PUMPS—
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INCH SIZES.





SKILSAW makes profits because it reduces costs — because it enables you to out-bid and out-perform those who still cling to the old, slow hand-saw methods! With **SKILSAW** you can do the job quicker, better and cheaper . . . and you can pay for this remarkable tool with your savings on the first job.

SKILSAW is America's leading portable electric handsaw—it has been the choice of builders for sixteen years because, model for model, it has more power, more construction refinements, more sawing applications. It is safe, accurate and durable. Operates from any A. C. or D. C. light socket. Cuts wood, metal, stone and compositions. 7 powerful sizes.

THE FIRST JOB

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Ask Your Hardware Dealer for a Demonstration and write for Our New Catalog

SKILSAW CUTS YOUR SAWING COSTS IN HALF



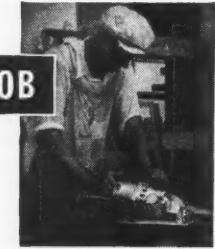
● Makes compound mitre-bevel cut on thirty 2 x 12 in. hip-pitch rafters in only 10 minutes!

PAYS FOR

● Cuts out a 16-step stair stringer from 2 in. rough, in only 10 minutes!



● Cross-cuts ten 2 x 4 in. studs in only 40 seconds!



● Makes compound mitre-bevel cut on thirty 2 x 12 in. hip-pitch rafters in only 10 minutes!

(Continued from page 100)
cooled by passing it over cooling coils. While the first set of silica gel beds is adsorbing moisture from the air passing through them, the second set is being reactivated.

The air being dehumidified passes through the beds in an upward direction (forced draft), whereas the air used for activating the silica gel passes through them in a downward direction (induced draft). This counterflow results in a self-cleaning action in the beds.

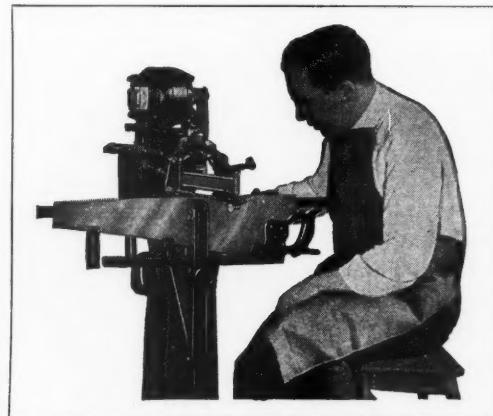
The dampers are shifted automatically once every ten minutes by an electric timer. While one silica gel compartment is adsorbing for a ten minute period, the other compartment is being activated for seven minutes and "purged" for three minutes. This purging period is necessary in order to cool the silica gel to the point where it will again adsorb water vapor. Purging is accomplished automatically by the electric timer, which turns off the gas burner and allows unheated air to pass through the gel beds. The air for activation is heated by a gas burner. The products of combustion from the heater are mixed directly with the air drawn in for activation.

Saw Filing a Profitable Side Line

FOLEY Automatic Saw Filers are being made by Foley Mfg. Co., 11 Main Street, N. E., Minneapolis, Minn., which are simple and easy to operate and file all kinds of hand saws, band saws and circular saws, that can be filed with a three-cornered file.

They do better and more uniform jobs than can be done by men who are expert at filing saws by hand. Each tooth is filed of uniform height, size and spacing so that every tooth cuts uniformly. The Foley Saw Filer works automatically with such precision that the teeth are filed perfectly and do a correspondingly perfect job of sawing. These machines cause no eye strain.

Saw filing is a very profitable side line for men of mechanical ability, and many who have started in this type of work are making from \$2.00 to \$3.00 per hour. Users of saws recognize the superiority of work done by Foley Automatic Saw Filers and become steady customers. Then the value of word-of-mouth advertising begins to be seen as these men tell their friends and the business grows by leaps and bounds. Many men have worked up a fine, permanent, paying business with these saw filers and as high as 96 cents out of every dollar taken in is clear profit.



FOLEY automatic saw filing machine in operation.

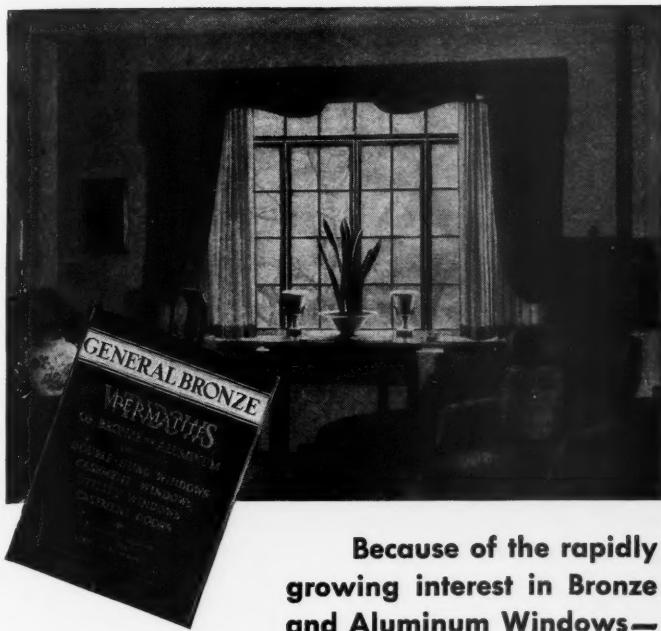
Device Locates Buried Pipes and Cables

A NEW instrument to locate buried pipes, cables, and other objects made of metal and measure their depth, etc., has been announced by the Fisher Research Laboratories Sales Company, Board of Trade Building, San Francisco, Calif.

This instrument, which is known as the "M-Scope," is of interest to all those who lay or use underground pipe or cable systems, or who excavate ground where such systems are located. By means of it, surveys can be made readily, records checked, and errors corrected. Lost lines, valves, manholes, etc., can be located. Unrecorded and illicit connections can be discovered. The stealing of water, gas, and oil can be detected and stopped. Costly exploratory excavations can be avoided. Damage to pipes and conduits and machinery during excavating can be prevented.

The M-Scope consists essentially of two specially designed

(Continued to page 104)



Because of the rapidly growing interest in Bronze and Aluminum Windows—

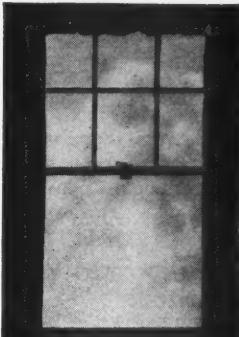
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These new, patented windows cost less than half as much as former windows of much less efficiency and no higher quality. Yet they are more beautiful, easier to operate, rattleproof and weathertight. Scientific tests show them to be excellent for air-conditioned buildings.

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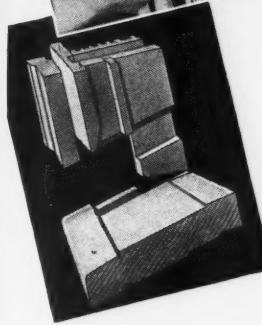
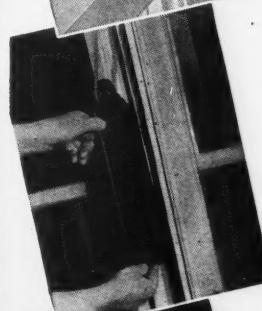
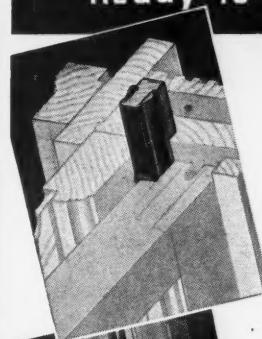
Please send us your FREE Specifications Book on Permatite Windows.

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Andersen NARROLINE Double Hung Windows in Complete, Ready-to-Install Units Are:



• WEATHERTIGHT

Andersen Bronze Weatherstrips have a proved efficiency rating of 86% elimination of air leakage, the highest of any weatherstrips on the market. They save fuel, keep out dust and add greatly to home comfort the year 'round.

• COUNTERBALANCED

To provide easy and unfailing sash operation, the time-tested principle of weight counter-balancing has been retained. The space required for weights has been greatly reduced by the use of a specially designed weight with pulley wheel which replaces two ordinary weights. Andersen noiseless and wearproof pulleys and steel sash chain that will not break or wear out, insure a lifetime of satisfactory and trouble-free sash operation.

• LEAKPROOF

Andersen Leakproof Locked Sill Joint with steep sill slope and chamfered blind stop to insure quick drainage, and the weather-tight wide blind stop, make the Narroline frame leakproof.

MAIL THIS COUPON FOR INFORMATION

ANDERSEN FRAME CORP.
Bayport, Minnesota

AB27

I would like complete details and a demonstration on Andersen items checked below:

MASTER FRAMES
 ANDERSEN CASEMENTS

NARROLINE WINDOWS
 BASEMENT WINDOWS

Name _____

Address _____

A FLOORING CONTRACTOR WITH 25 YEARS' EXPERIENCE SAYS:

"We have Found Your D-8 Sander the Fastest Most Economical Machine on the Market."

Read the entire letter, which came unsolicited from Mr. Wilbur Zumwalt of Zumwalt & Son, floor laying, sanding and finishing contractors of Columbia, Missouri:

"Gentlemen:

"We have been in the floor business for the past twenty-five years, and in that time have operated all well known makes of sanding machines.

"We have found, however, in the last two years after buying three of your D8 sanders, that they are the fastest and most economical machines on the market. Their endurance is unlimited, and I have sanded as much as 3,500 sq. ft. of old oak floors in ten hours which I think is a record for one machine in that length of time.

"We are more than satisfied with our machines and would like to commend you on the fair dealings and prompt service."

Throughout the country you will find hundreds of users of DREADNAUGHT 8 Sanders, all just as convinced as Mr. Zumwalt is that DREADNAUGHT is the fastest and most economical sander in existence. But you need not take anyone's word for it. Write for a free demonstration. Try the machine yourself. And remember that the DREADNAUGHT is sold on a 60-day money-back guarantee to fulfill all claims made for it. Write for complete details or free demonstration at once.

CLARKE SANDING MACHINE CO.

Dept. AE-237, Muskegon, Mich.

Handles the Biggest and Toughest Floor Sanding jobs at Lowest Cost per Square Foot. Uses from $\frac{1}{2}$ to $\frac{1}{2}$ less sandpaper.



**Years Ahead
IN DESIGN AND CONSTRUCTION**

(Continued from page 102)

radio units, a transmitter and a receiver. For most services two men are required, one for each unit; for others, both units are handled by a single operator. No electrical contact with the object being sought or traced is required except when tracing a single member of a compact group of pipes or cables.

In using the assembled M-Scope to locate a buried pipe or cable line, the operator switches on the transmitter, puts on earphones connected with the receiver, and carries both units in the direction of the line, if this is known. As he approaches the line, the sound heard in the phones gradually increases and a needle on an indicator meter swings forward, both signals reaching maximum when the operator has crossed the line. This spot is marked, and the operator then continues onward along the same straight line until the signals become minimum. Then he retraces his steps until both signals are maximum once more. The point halfway between this spot and the one previously marked lies directly over the center line of the buried pipe. One-half of the distance between the two marked spots is the exact depth of the pipe.

To trace the line, the transmitter is set on the ground directly above it, and the operator, carrying the receiver, follows the path along which sustained signals are received. Sudden increases in the signals mean additional metal—a valve, junction, etc.—just below. Sudden decreases mean that the line has turned aside or ended. Branches are located by placing the transmitter above the main line and carrying the receiver parallel to this line. Or the receiver can be placed on the ground directly above the pipe and the transmitter can be carried at right angles but parallel to the pipe. Areas containing unknown lines can be readily surveyed by two men, each carrying a unit. An ingenious device—actually a level—on the receiver makes it possible to measure the depth of a line by merely carrying the receiver along a path running at any angle as recorded by the level to the buried line.

Energy for both units is supplied by standard dry cells which last several months in normal service. Individual units weigh about 8 lbs. each. The complete instrument in a carrying case weighs about 22 lbs.

New Garage Hardware Installation Method

A METHOD of installing 50-50 Push-Over garage hardware, made by Allith-Prouty Mfg. Company, Danville, Ill., has been devised for jobs where it is desirable to have the counter-weight boxes for several doors placed together on one wall. Such an installation was recently completed on a group of 8'x8' doors illustrated below. The longer cables are the only equipment which differs from the regular arrangement. The owner wanted access only through a side door, hence the release chains are on the inside and no locking apparatus appears on the outside.



MULTIPLE Push-Over doors with grouped weight boxes.



Tego-bonded panels form entire exterior and interiors of this Gunnison Magic Home, Louisville

TEGO-BONDING MEANS EXPOSURE-PROOF PLYWOOD

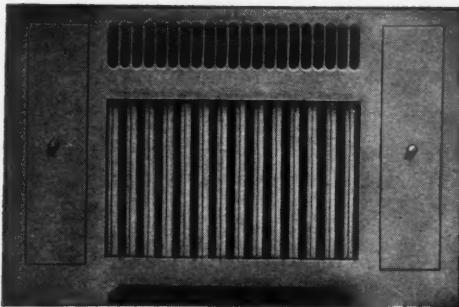
PLYWOOD that is really proof to water, weather and mold has become an established commercial product in the past two years.

Tego-bonding—gluing with dry resin film adhesive—has made the availability of such a material a fact.

Tego-bonded plywood offers not merely improved resistance to moisture and exposure breakdown. It offers permanent assurance against delamination due to glue deterioration, whether from water, climate changes or mold growth.

Tego Resin Film is manufactured by *The Resinous Products and Chemical Company, Inc., Philadelphia, Pa.*

RESINOUS  PRODUCTS



The Burnham Panel Front is made of pressed steel. It screws directly to the wall. Fits flush with baseboard. Panel on either side is removable to reach the control valve. Made in various standard heights and lengths.

The Burnham Slenderized Radiator is no deeper than the length of your fore-finger. Fits under windows between studding. Is 40% smaller than old tube-type radiators. Heats 40% quicker. Glad to tell you exactly why.

Two Kinds of Heat From the One RADIATOR

AS you know so well, in spite of their better appearance advantage, there have always been two disadvantages to enclosing radiators:

FIRST—You get only convected heat. You lose the distinct advantage of radiant heat.

SECOND—The pull of the cool air across the floor to supply the enclosed radiator, is often uncomfortable. This is especially true with automatic controlled heat, such as oil, gas and stoker-firing of coal with their intermittent on-and-offs.

The problem, therefore, is to overcome floor drafts and secure the combined advantage of both the *radiant* and *convected* heat.

That is fully accomplished by recessing the Burnham Slenderized Radiator and using the Burnham Panel Front. The large opening in the panel exposes the radiator, which is so good looking it gives a grille effect. From it comes an abundance of radiant heat. From the grille above comes the convected heat, flowing at a higher velocity, causing a rapid circulation.

The reflected radiant rays heat the lower part; the convected, the upper part of the room. The two come together giving not only a quicker heating result, but one free from objectionable drafts. It insures a gently comfortable heat at all parts of the room. You get the two kinds of heat from the one radiator. Send for booklet giving full particulars.

Burnham Boiler Corporation

Irvington, New York Zanesville, Ohio

Representatives in All Principal Cities of the U. S. and Canada

MAKE BIG MONEY ALL YEAR 'ROUND

Here's a sure, fast way of making big money in floor surfacing! Either of these new 1937 floor sanders, the new "Little American" or the improved "Handy Sander" and a pair of overalls are all you need to get into this profitable work of surfacing and refinishing floors. With enormously increased building already under way, floor surfacing men right now are in greater demand than ever before. Here's your chance to get into something for yourself and make the big money you have been looking for—to be your own boss and put all the profits into your own pocket.



'round. They do not know what a "dull" season means. There are scores of jobs right now all around you in homes, apartments, office buildings, stores, schools, colleges, clubs, hospitals, churches, dance halls, roller rinks, bowling alleys, auditoriums. All have floors that need resurfacing. There is a lot of satisfaction in having "inside" work on stormy, nasty, winter days. Sign and mail coupon below and get complete details and prices, etc., without cost or obligation. It costs nothing to investigate.



THE AMERICAN
FLOOR SURFACING MACHINE COMPANY
511 SO. ST. CLAIR ST. TOLEDO, OHIO

RETURN COUPON TODAY

THE AMERICAN FLOOR SURFACING MACHINE CO.
511 South St. Clair St.,
Toledo, Ohio.

Gentlemen:

Without cost or obligation send complete details, prices and catalogs on the following machines which I have checked below:

New "Little American" Floor Sander
 Improved American Handy Sander.

Name _____

Street _____

City _____ State _____

News of the Month

Building Activities and Meetings

Construction Total for 1936 Shows 45% Gain Over 1935

THE year 1936 provided a construction total in the 37 eastern states of \$2,675,296,000, a gain of 45 per cent over the figure of \$1,844,544,900 for 1935. Increases over 1935 were especially pronounced in residential building which showed a gain of 67 per cent in the 1936 figure of \$801,623,800 as against only \$478,843,100 for 1935. Large increases occurred, too, in commercial building, for which the 1936 figure amounted to \$249,136,100 as against only \$164,479,800 for 1935. For factory building the 37 states' figure totaled \$198,019,100 in 1936 as against only \$108,858,500 for 1935. Public, educational and institutional building in 1936 amounted to \$506,104,500 and compares with only \$402,150,300 for 1935.

For Public Works and Utilities the 1936 construction figure reached \$920,412,500 as contrasted with only \$690,213,200 for 1935. It was in this class of work that the greatest influence of PWA and WPA projects was centered.

The December 1936 total for construction of all descriptions in the 37 eastern states amounted to \$199,695,700 and compares with \$208,204,200 for November, 1936, and \$264,136,500 for December, 1935. The loss from December, 1935, was entirely due to a shrinkage in public projects of every description.

Residential construction started in December, 1936, amounted to \$65,487,300 as against \$68,440,700 for November, 1936, and \$45,140,100 for December, 1935.

The first figures available for 1937 appear in the table below:

	37 Eastern States Jan. 1-15, 1937	Jan. 1-15, 1936	January, 1936
Residential	\$ 27,438,300	\$ 16,224,500	\$ 37,439,500
Non-Residential	43,614,200	36,601,900	90,479,800
Public Works &			
Utilities	30,151,300	40,813,600	84,873,500
Total	\$101,203,800	\$93,640,000	\$214,792,800

Steady Advance to Better Conditions Shown in Real Estate Survey

THE outstanding development in the findings of the Twenty-Eighth Semi-Annual Survey of the Real Estate Market made by the National Association of Real Estate Boards from confidential reports from 253 cities is the fact that renewed demand for business property is already reflected in higher rental scales for the downtown sections of cities in about three-fourths of the principal cities of the country.

The reports further reveal that a steady advance is shown in every phase of the market, more nearly uniform for cities of every type and every geographical section than has been the case for years. Many cities report the gain as far enough consolidated as to indicate a very active building year ahead, but new construction is very definitely for use. A steady, healthy rise is indicated.

In cities where real estate advance has been most marked, new building is reported as having stabilized the upward movement of residential rents. New apartment construction has begun to join new home building to counterbalance the growing absorption of existing residential space.

Comments from individual cities show the very close relationship between financing conditions and the outlook for new home building. Mortgage terms available, including interest rate and length of the mortgage term, are cited by city after city as the dominating factor of their individual situation in the market outlook.

Gross cost to the borrower on first mortgages with good security is reported to be at about last year's level in 61 per cent of the cities, with 37 per cent of the cities reporting that the cost is falling. Interest costs are going up in 2 per cent of the cities, all of them comparatively small cities.

(Continued to page 108)

New Profit Item ...SELLS ITSELF!



"And it permits unlimited decorative possibilities for every room in the house."

Real wood paneling...economical to buy...easy to install, repair-free!

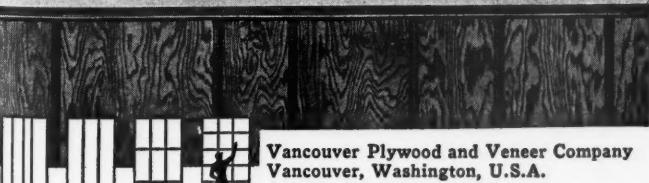
• Millions of persons are being told each month about ART-PLY, the inlaid plywood. Advertising is appearing in Better Homes and Gardens, American Home, House and Garden, Sunset, Architectural Forum, and numerous trade journals.

This stupendous mass circulation, backed up with free advertising literature, is creating unprecedented demand for this latest innovation in modern interiors.

Dealers, builders, contractors—all can profit from ART-PLY. Its uses are practically unlimited. There is nothing like it on the market . . . and user as well as seller is assured of a stable price.

FACTORY REPRESENTATIVES

G. FREEMAN TIBBETTS	Swampscott, Mass.
22 Walker Road	
W. H. MACFARLANE	New York City
515 Chrysler Bldg.	
C. J. ASHTON CO.	Detroit, Mich.
746 New Center Bldg.	
SIDNEY W. CORNELL	St. Louis, Mo.
4938 Lindenwood Ave.	
GEORGE C. PHILLIPS	Los Angeles, Calif.
423 Petroleum Securities Bldg.	
R. C. FREDERICK	Houston, Texas
538 West 21st St.	
W. H. FULLERTON	Chicago, Ill.
1407 Railway Exchange Bldg.	



ART-PLY, inlaid multi-paneled sections come in 4 standard patterns. Sizes, 4 ft. x 8 ft.; 3-ply thickness durable Douglas Fir.

Vancouver Plywood and Veneer Company
Vancouver, Washington, U.S.A.

Gentlemen—Please send me more information about ART-PLY for walls and ceilings.

Name.....

Address..... ABV-2

Endorsed by dealers....
Approved by users....
Supported by resultful cooperation....



• All over the United States, thousands of sets of Hall Overall Garage Door Hardware are in use, giving satisfactory service. The original, low-priced, overhead type of garage door set, it has opened new profit possibilities for dealers and contractors alike.

Hall Overall Garage Door Hardware is easy to install, because it is simple in design and there are no complicated parts to get out of order, nothing to cause dissatisfaction. Outstanding in design and quality, the price is surprisingly low, it shows you a good profit.

Furthermore, every distributor who qualifies for the Hall franchise, reaps the benefit of a steady stream of practical cooperation. Dealer franchises for 1937 are still open in some communities. Yours may be among them. Therefore clip the coupon and send it today for full details about Hall Overall Garage Door Hardware and our sales-building plans.

OVERALL DOOR SET

HALL MFG. CO., Cedar Rapids, Iowa

Please send me information about Hall Overall Garage Door Hardware.

Name.....

Address.....

City..... State.....



(Continued from page 106)

Present actual interest rate at which first mortgage loans on new moderately priced homes are now most commonly being made is still the 6 per cent rate. Of cities reporting, 64 per cent cite it as the rate in most common use. This is exactly the percentage of cities so reporting six months ago.

Real estate prices are higher. The advance now shown in 80 per cent of the cities of the country began, of course, in built property. The present survey shows the first post-depression reports of an advance in the price of home sites. The rise here reported by some cities has been as much as 10 per cent. Subdivision lots are selling more actively than last year in two-thirds of the cities.

Market demand is more active in 96 per cent of the cities. Only one city of the 253 showed any sag either in market activity or price level. Things are still going at about the level of last year in 4 per cent of the cities.

Every city of over 100,000 population reports a more active real estate market than a year ago.

Repossessed property is still dominating the market in some cities, but the proportion is very much smaller than was the case six months ago.

The low returns yielded by savings banks and like institutions are a factor in turning idle funds into investment real estate.

Residential Space Is Well Absorbed

Details of the survey findings as to the situation in the present residential field follow:

1. Residential space is shown to be well absorbed. But notwithstanding the increased space absorption, rise in residential rents, while very general over the country, has been very gradual. This is true both for detached houses and for apartments.

2. Under-supply of single family dwellings is shown in 72 per cent of the cities. Only 1½ per cent of the cities report any over-supply. In a like survey of six months ago 76 per cent of cities reported an under-supply of single family dwellings. The slight decrease would appear to be an indication of the balancing effect of new home building.

3. An under-supply of apartments exists in 55 per cent of the cities, according to these official confidential reports from local real estate boards. One city reports every desirable apartment unit occupied. Only 2 per cent of the cities report any remaining over-supply of apartments.

4. No city of over 100,000 population shows any over-supply in single family dwellings, but the very largest cities (over 500,000 population) in 22 per cent of the cases show over-supply of apartments.

5. Rents are up for single family dwellings as compared with a year ago in 90 per cent of the cities, and are down in less than 1½ per cent of the cities. Apartment space is higher in 86 per cent of the cities and not a single city of the country shows any down-trend of apartment rents.

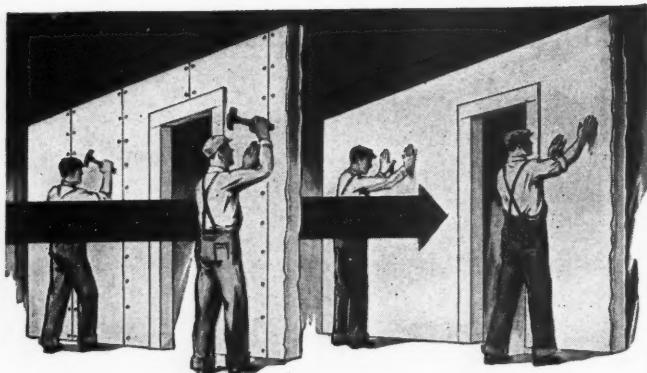
6. The amount of increase most commonly reported is only about a 10 per cent increase. Approximately half the cities of the country give their rent rise as 10 per cent both for detached dwellings and for apartments. Approximately 20 per cent of the cities show a 15 per cent rise in both single houses and apartments. While 13 per cent of the cities show a 20 per cent rise in single family dwelling rents, only 8 per cent of them show this much advance in apartment rates. Only about 4 per cent of the cities show the rise for either houses or apartments to be as high as 25 per cent.

Celotex to Handle Thermax Products

THE Celotex Corporation on Jan. 1 became exclusive sales agents for Thermax Structural Insulation and Absorbex Acoustical Corrective, having completed negotiations with The Northwest Magnesite Company.

Both being fire-retardant products, they are distinctly different from Celotex in physical properties and appearance. Manufacturing facilities are at Chewelah, Wash., the source of raw materials—timber and refractory cement.

R. E. Bennett, formerly in charge of the Thermax Division of The Northwest Magnesite Company, has joined The Celotex Corporation and is working on distribution arrangements. Sales headquarters will be at The Celotex Corporation's offices in Chicago.



STOP worrying about WALL JOINTS!

With these big sheets you do a whole wall or ceiling in one piece—save time and labor.

YOU'RE INTERESTED in lowering the cost of construction. Big sheets—up to 8' x 14'—constitute just one of the features evolved by Homasote engineers, to help you bring down your costs. We can probably show you the *lowest cost construction per cubic foot* ever worked out. We invite you to write for our suggestions on simplified planning. They will open your eyes to new sales opportunities all around you.

Have you a market for a 6-room house to sell for \$3500? Or a summer camp or cabana at \$900? If you're in a rural area, we can show you a multiple sales opportunity with every prospect. (Homasote Precision-Built Homes are qualified for FHA Mortgages.)

Homasote is a quality product—with high structural strength, high insulating efficiency and pleasing appearance. It takes paint or paper with quick adhesion and no waste of materials.

You can use Homasote profitably—somewhere on every construction job—new or modernization—large or small. Get acquainted with its fine qualities and many uses. Let us send you descriptive literature. Homasote is nationally advertised—in both urban and rural areas. Do business with the Homasote dealer; we are working with him to supply you with live leads to new business.

Also in NEW PANEL FORMS

We recently introduced *Panelized Insulation*—which is Homasote in panels with attractive, natural wood graining (several types). It made a hit immediately. Write for pictures.



THE AGASOTE MILLBOARD CO.
TRENTON, N.J.

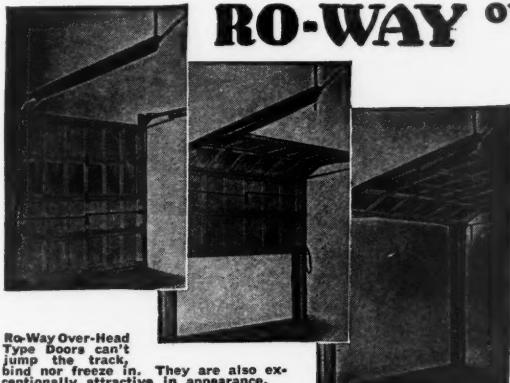
Manufacturers of Quality Products since 1909

WEATHERPROOF
HOMASOTE
INSULATING AND
BUILDING BOARD

THEY STAND UP in Hard Service

—and operate easily under all weather conditions

● It takes the winter months to prove the greater satisfaction Ro-Way Doors give in actual service. They are easy to open in all kinds of weather. Snow and ice cannot obstruct them. Winds cannot abuse them, and their sturdy over-head type of construction insures heavy winter service without impairment of equipment. All hardware is mounted on the inside—away from the elements. Other advantages of Ro-Way Doors that add to their economy and convenience are . . . Floorlift cannot cause binding or sticking . . . over-head type construction will not permit sagging . . . full ball bearing track rollers and sheaves assure effortless opening and closing . . . proper tensioned springs provide perfect counter-balance for weight of door . . . bolts, nuts and screws are cadmium plated . . . all other hardware parts are factory-primed with metal rust-proof paint.



Ro-Way Over-Head Type Doors can't jump the track, bind nor freeze in. They are also exceptionally attractive in appearance.

RO-WAY OVER-HEAD TYPE DOORS

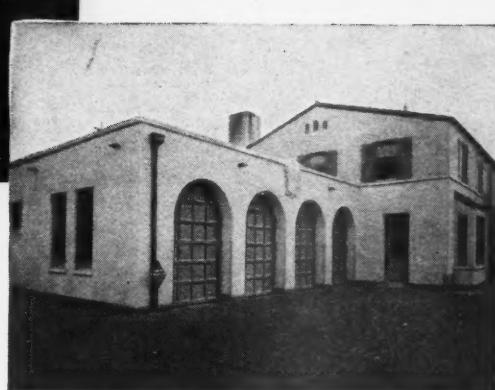
are available in commercial sizes and residential sizes, and the Ro-way line includes dependable electric operators. Investigate the Ro-Way specially designed Torsion Spring High Lift Doors for use in public service stations. Also the Ro-Way low-priced doors for residence garages.

Write for Ro-Way Door Folder and Price List. Also special folder on Ro-Way Electric Operators.

Rowe Mfg. Co.

740 Holton St.,
Galesburg, Illinois U.S.A.

U. S. Government Inspection Station. Note all Ro-Way Doors have arch segment tops, to conform to architect's design.



Ro-Way Garage Doors are architecturally correct in design and pleasing in appearance.

FITTING 7000 DOORS—THE CARTER WAY



Photo Courtesy The Peterson Company, Cleveland

This is part of a large Cleveland job on which 7000 doors are to be fitted and hung with Carter Tools.

Doors were first fitted, including a bevel on the closing side, with a Carter Power Plane.

1 Carter Router cutting lock face parallel with the bevel on the door.

2 Carter Lock Mortiser cutting lock mortises.

3 Carter Router with Hinge Butt Templet cutting mortises for the butts.

4 Attaching butts to the door.

RESULTS: Better work with less effort. Butts fitting tightly in the mortises

carry the load. The screws merely hold the butts in place. Send for the folder giving full details on these Carter Tools. R. L. Carter Division, The Stanley Works, 133 Elm Street, New Britain, Conn.

CARTER TOOLS

MASONITE TEMPRITILE proves that a new bathroom is ALL IN A DAY'S WORK



MRS. C.—"I certainly wish we could afford to brighten up our bathroom. It's so dingy I'm ashamed every time we have guests. But it would cost so much and be so much trouble."

MR. C.—"This advertisement says MASONITE TEMPRITILE produces gleaming tile effects at low cost. I'll call the builder and ask about it."



THE NEXT NIGHT

MRS. C.—"Look how beautiful our bathroom is now. I never dreamed one carpenter and one painter could do such a fine job in one day."

MR. C.—"Ah! That's the secret of MASONITE TEMPRITILE. They say it's so easy to work with I could have done the job myself. And guess what! All this spotless luxury of ours cost less than I paid for my winter overcoat."

MASONITE TEMPRITILE assures a good job well done—quickly! Satisfaction clients. Adds to the sale or rental value of any property. Be sure you know all the advantages and economies of MASONITE so you can put them to work in stores, offices and apartments. Mail the coupon for FREE sample and further details.



MASONITE

THE WONDER WOOD OF A THOUSAND USES
A MISSISSIPPI PRODUCT

MASONITE CORPORATION, Dept. AB-2
111 W. Washington Street, Chicago, Ill.

Please send me FREE sample and more information about MASONITE TEMPRITILE.

Name _____

Address _____

City _____ State _____

Kelly Made Republic Building Products Co-ordinator

F. A. KELLY, manager of the Culvert Division of Republic Steel Corp., has been appointed building products co-ordinator, attached to the General Sales Department of the corporation. The new position was created because of the wide interest the corporation has in the building field through its subsidiaries—the Truscon Steel Co., the Berger Mfg. Co., and Steel & Tubes, Inc.

Mr. Kelly has been associated with Republic since 1931, when he became vice president and general manager of the Canton Culvert Co., then a subsidiary. Born in Akron, he spent some years as a newspaper man and in 1927 joined Electric Research Products, Inc., the sound division of Western Electric Co. Following two years with this organization he became vice president of the Enterprise Aluminum Co., Massillon, in 1929, continuing there until he joined the Republic subsidiary.

F. A. KELLY



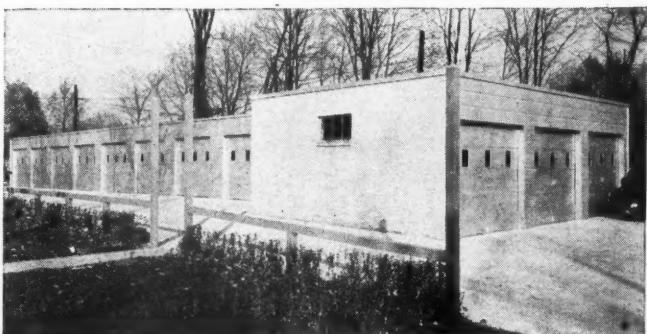
Syracuse Architectural Scholarships

THE Department of Architecture, Syracuse University, Syracuse, N. Y., has announced a scholarship competition for freshman architectural students to be held this year.

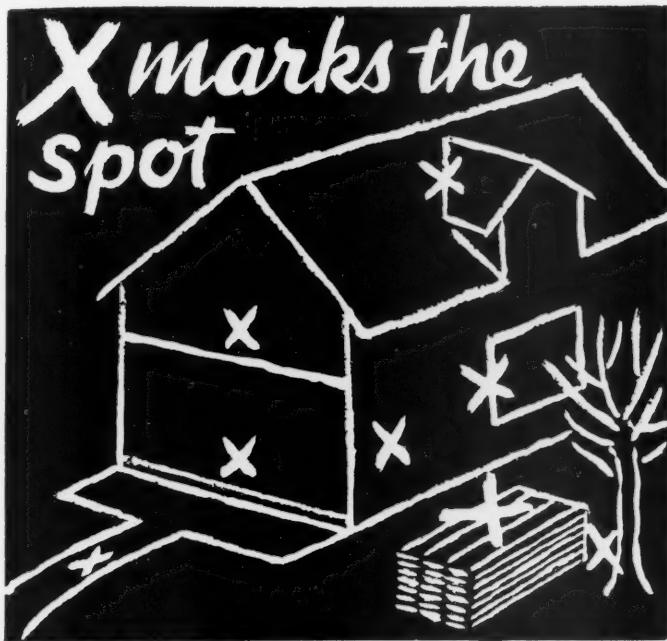
One \$300.00 and four \$150.00 scholarships are to be granted by competition on Saturday, July 17. The competition will be in two fields—drawing and preparatory school record. (1) Contestants must send to the College of Fine Arts not later than Monday, July 5, a portfolio containing not more than 20 examples of their work in free-hand and mechanical drawings, together with three letters of recommendation as to personality, character and general fitness. Judging the drawings by a committee of the Architecture Faculty will take place on Saturday, July 17. (2) The high school records of all contestants will be carefully examined by the Director of Admissions and the Architecture Faculty Committee to determine fitness for a course in Architecture.

Each portfolio of drawings, etc., must contain the name and address of the student contestant and a statement from the student's high school principal that the drawings, etc., in the portfolio are the original work of the student submitting them. Stamps for the return and insurance of the portfolio must be sent to Dean H. L. Butler, College of Fine Arts, Syracuse, N. Y.

Each contestant must be a graduate of an accredited high school, and must, on or before June 22, apply to the Director of Admissions for entrance to the College of Fine Arts as a regular student. Further particulars are available from the college.



ABOVE illustration is probably the first picture of an apartment house garage equipped with the new Kinnear All Steel Rol-TOP Doors. The garages are arranged in an unusual manner.



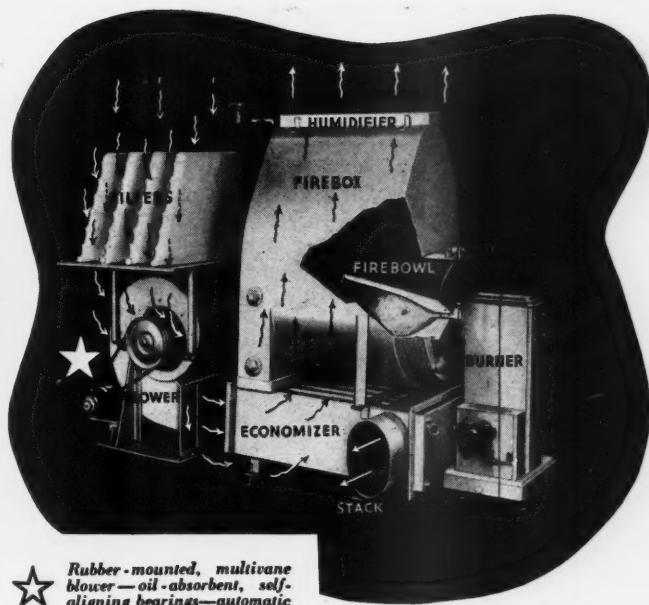
for SISALKRAFT

THESE vital spots need protection—on any building job. Contractors and builders use Sisalkraft for this protection because they know it's absolutely waterproof, tough, and air-tight.

- ✗ Use Sisalkraft over all sheathing. Prevents infiltration of air and moisture because its strength insures application without damage.
- ✗ For the same reason, use it as flashing around doors and windows.
- ✗ Put it under all floors and have it bent up under the baseboards. This makes both a moisture stop and a cold air stop because Sisalkraft can be so bent without cracking. Prevents drafts and damp floors. And use it to cover finished floors, for temporary protection.
- ✗ Sisalkraft belongs under roofing. Remember, it's waterproof.
- ✗ Use it to line attics, store rooms and garages.
- ✗ Cure concrete walks and basements with it.
- ✗ Use it to cover all delivered building materials for protection against the weather.
- ✗ Wrap trees with it to protect them against mechanical injury during construction.

Sisalkraft is two layers of kraft paper, waterproofed, and reenforced with millions of sisal fibers. It's tough—handles easily—can be nailed and formed into place. Lasts indefinitely. Inexpensive—but adds real value to any building. Our new booklet "The Importance of Building Paper" shows where and how good paper should be used. Write for it—and we'll be glad to send you a liberal sample of Sisalkraft, too.

THE SISALKRAFT COMPANY
203-b West Wacker Drive CHICAGO



★ Rubber-mounted, multivane blower—oil-absorbent, self-aligning bearings—automatic belt tension—quiet-starting motor—low speed operation.

THE EXCLUSIVE Gar Wood AUTOMATIC HEAT AND AIR CONDITIONING CIRCULATING SYSTEM

The coordination of all units of the Tempered-Aire system exceeds that of any domestic air conditioning system in the world. And each unit is a masterpiece of design and efficiency.

The silent multivane blower, for example, changes the air in every room about four times an hour. It forces the tempered air through the Gar Wood Air-Dux system of balanced warm air and return ducts, under constant, measured control. No blasts of hot air. No cold drafts. No unevenly heated rooms nor corners.

Correct circulation and ventilation is still another reason for Tempered-Aire's popularity among architects and builders. Shall we send you the complete facts?

Air Conditioning Division
GAR WOOD INDUSTRIES, INC., DETROIT, MICHIGAN
Canadian Distributors: Engineering Industries, Ltd., Leaside, Ontario



SEE OUR EXHIBIT AT THE NATIONAL OIL BURNER AND AIR CONDITIONING EXPOSITION, MAR. 15-19, PHILADELPHIA, PA.

*Build every
fireplace
around the
Heatilator*



**★ Easier to Build
★ Circulates Heat**

THE Heatilator is a steel heating chamber hidden in the fireplace—a correctly designed form for the masonry that insures SMOKELESS operation. Complete from floor to flue, including well-proportioned firebox, smoke dome, damper and down-draft shelf, it greatly simplifies construction—saves materials and labor.

Cold air is drawn from the floor into the heating chamber—warmed—then circulated to every corner of the room and to adjoining rooms. The Heatilator cuts months off the heating season and dollars off the fuel bill by providing living comfort during cool spring and fall weather. In mild climates and for summer homes and camps, it is the only heating equipment required.

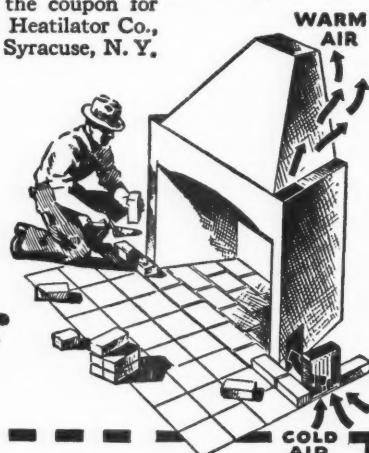
A Proved Selling Feature

The Heatilator advantages are easy to demonstrate. They appeal to the owner or prospective owner. And many of your customers already know about the Heatilator and are sold on its features. A Heatilator Fireplace will help sell the house.

Heatilators are sold by leading building-supply and lumber dealers. Send the coupon for complete information. Heatilator Co., 752 E. Brighton Ave., Syracuse, N. Y.

**NEW LOW
PRICES**

A Heatilator Fireplace now costs but little more than ordinary construction. Send coupon for complete details.



**Heatilator
Fireplace**

HEATILATOR CO.

752 E. Brighton Ave., Syracuse, N. Y.

Please send Heatilator booklet of fireplace suggestions and installation information. Also new price list.

Name.....

Street.....

City..... State.....

Marquette Cement Foresees Good Year

THE sales organization of Marquette Cement Manufacturing Co. met in January in convention at the Stevens Hotel, Chicago. The report on every section of the Mississippi Valley, as brought to the gathering by those in attendance, was most optimistic. Sales quotas were exceeded in 1936. Those present forecast a better year to come, and an outlook more favorable than at any time during the past few years. An analysis of the contributing factors was made by Mr. W. A. Wecker, president.

Additions to the company's selling staff have been made as follows: Eldon J. Voss, of Galesburg, Ill., as representative in West Central Illinois; Ham Gray, representative in South Central Illinois; and A. H. Doyle, Anderson, Ind., is assigned to Northeastern Indiana.



W. A. WECKER

Armstrong Opens New Sales Offices

NEW district offices to handle the sale of fibre board insulation, tile floors, acoustical materials, and contract selling jobs on linoleum have been opened in Washington, D. C., and Los Angeles and San Francisco, Calif., by the Armstrong Cork Products Co., Building Materials Division. E. S. Graybill, who has a background of many years of experience on contract floor work with the company, has been appointed district manager of the new Washington office. James R. Tencher, who recently completed sales training work, also has been assigned to the Washington office. C. B. Sauer, formerly manager of Armstrong's Des Moines office, has been appointed Los Angeles district manager. He will be assisted by George S. Griffith, who recently completed a sales training course at the company's general office in Lancaster. F. K. Pinney, formerly a contract salesman with Armstrong's Floor Division, will serve as district manager of the San Francisco office. He will be assisted by John W. Harvey, of Armstrong's recent sales training class.

New branch offices of the Armstrong Building Materials Division have been established, or will be opened within the next few weeks at Seattle, Wash., Denver, Colo., and New Orleans, La.

No Deterioration in First Porcelain House

THE world's first porcelain enameled house, erected by Ferro Enamel Corporation, on Campus Drive, South Euclid, O., in 1932, and now privately owned, was recently checked for results after four years standing. The report is decidedly satisfactory.

Ferro's original experimental house is finished in porcelain enameled shingles, applied to the side walls over a sheathing of steel-bound fibre insulating board. The roof is covered with the same type of enameled shingles. After four years there are no signs of deterioration in the porcelain enamel materials.



FIRST porcelain enameled house built in 1932 at S. Euclid, O.

SPECIAL OFFER This Gun

With 3 Nozzles and 4 Filled Cartridges
Shipped Express Collect for

\$7.40



This new type, high pressure Cartridge Calking Gun (patent applied for) is a great time and material saver. Pecora Calking Compound is specially packed for this gun in non-refillable metal cartridge of approximately one quart capacity.

Be Sure To Calk All Door And Window Frames With PECORA CALKING COMPOUND



Any handy man can apply Pecora Calking Compound around door and window frames. It is the sure way to make a residence or building weather-tight. Saves money for the owner on fuel bills by reducing heat losses. Avoids damage to interior by rain and snow seepage. Properly applied, it will not dry out, crack or chip. Specified by leading architects. Used by largest builders. Made by an old reliable firm.

Write for Bulletin and Prices

Pecora Paint Company, Inc.

Member Producers' Council, Inc.

4th Street and Reading R. R., PHILADELPHIA

Established 1862 by Smith Bowen

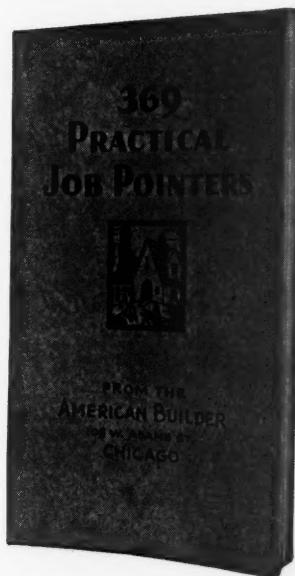
SASH PUTTIES
MORTAR STAINS

FURNACE
CEMENT

SUCTION MASTIC
for Structural Glass



**NEW
LOW
PRICE**



**NOW
\$0.75**

369 Job Pointers is a collection of practical ideas by building men. With graphic illustrations these show short cut and better methods for handling lumber, brick, stone, etc. Novel means for remedying stuck windows, repairing leaks in roofs and walls are brought together in this handy "troubleshooter" book. An index enables quick reference. 1934. 192 pages, illus., 4 1/2 x 8 1/2, paper, \$0.75.

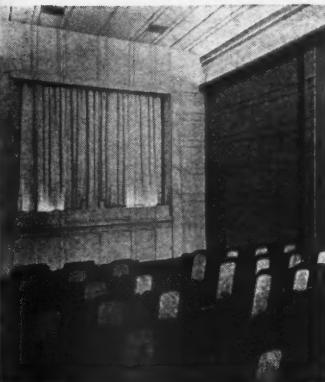
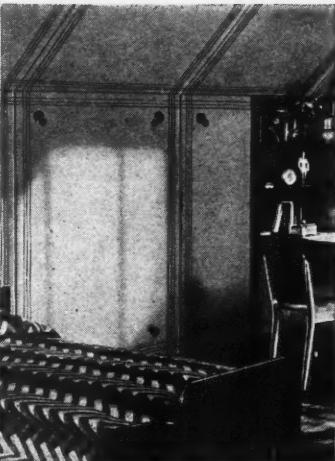
Book Service Department
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30 Church Street, New York, N. Y.



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FIBRE BOARD



8 big pages of valuable information — how walls and ceilings can be modernized and beautified with special designs in fibre board. How to build a simple working table for handling fibre board. How to make the many useful and decorative cuts possible with Stanley Fibre Board Tools, including grooving, beveling, mitre joints, ship lap joints, and circular cuts.

This book can open the door to a valuable and profitable new kind of work for you. If you do nothing but read it, it is sure to give you much useful information. It costs you nothing. Sit down now and send the coupon—it will pay you.

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New Britain, Conn.



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Install a PEERLESS damper

You wouldn't build a house without an outside door. But many builders fail to realize the importance of installing a PEERLESS DOME DAMPER in the fireplace. Peerless dampers not only insure a proper burning fireplace but seal the chimney flue when the fireplace is not in use, preventing unhealthful drafts and heat loss. This is very essential to the efficient operation of the heating plant and air conditioning units.

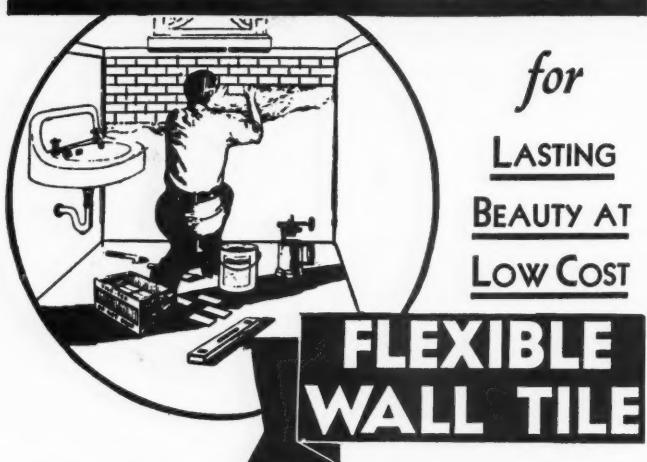
PEERLESS DOME DAMPERS are built of heavy stove plate cast-iron in all standard sizes and come in three models—Rotary, Poker or chain control. Write for details and prices.

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Fireplace fixtures—ash dumps—coal windows—ash pit doors—garbage receivers, radiant gas heaters, Gas Conversion Burners and Stokers. Details and prices on request.

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Tile-Tex is a real wall tile that will not craze, crack, warp or mar. Can be applied right over plaster walls or wall board.

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THE TILE-TEX COMPANY
1229 McKinley Avenue Chicago Heights, Illinois

Decorative WALL TILE
TILE-TEX
Resilient FLOOR TILE

LETTERS from Readers on All Subjects

Facts, opinions and advice
welcomed here

Californian Feels Neglected

Berkeley, Calif.

To the Editor:

I agree with Mr. Hoyt's remarks in your January number concerning lack of plans for California homes in any of your issues. I find also that practically all the statistical information leaves out the western states. And going a little further, many of your advertisers seem to overlook sending literature asked for, to us out here. This is presumably because they have no western outlets.

But getting back to the original idea, I do not remember ever seeing a design for a California Monterey Colonial, or similar type. Not only that, but the great majority of floor plans would never sell a house out here. For instance, in your December number over 80 per cent of the plans have either one or more of these bad features, (at least they're bad from a California viewpoint):

Dining room not joined to living room, but separated by stair well.

Stair well goes up from living room; no direct access from front door.

Kitchen located either too far from front door, or else situated so that one must walk through every room downstairs to get to front door.

Closets are placed in awkward places in bedrooms, keeping rooms out of square.

They may be able to do it in the East, but not here.

R. W. WILL, Contractor.

From an Architect

Webb City, Mo.

To the Editor:

I wish to express my appreciation of your magazine. I believe it is one of the best for the contractor published, and very good for the architect. The listed catalogs are sure a help to the architect as well as the builder. I enjoy your News of the Month; also Letters department. I wish you success.

C. W. STINES, Architect.

Fee for Lot Appraisal

Kenosha, Wis.

To the Editor:

In your January, 1937, issue you published an article signed by the writer under the heading, "Letters Department." In the last paragraph the following statement was made:

"There are still some charges made by the local banks on FHA loans which we consider exorbitant. As an illustration, there is a charge of some \$20.00 to \$24.00 made for photographing the mortgagee's lot."

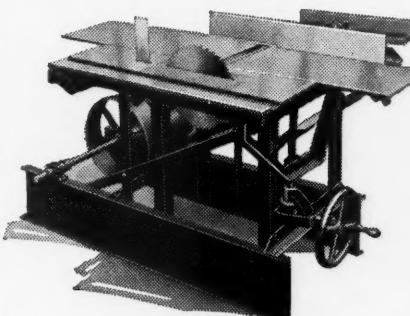
The writer was in error in making this statement, and I regret that I did not check into this so-called photographing charge more carefully. Upon investigation, I find that the charge mentioned above includes a charge of \$3.00 for photographing and plot plan and the balance of the \$20.00 is consumed in the lot appraisal and lot survey.

I would appreciate it very much if you would make a correction in your next issue, as I feel I have done an injustice to the local banks in stating that the entire charge of \$20.00 to \$24.00 was for photographing the mortgagee's lot.

R. J. ECKENRODE,
Ray J. Eckenrode Co., Contractors & Builders.

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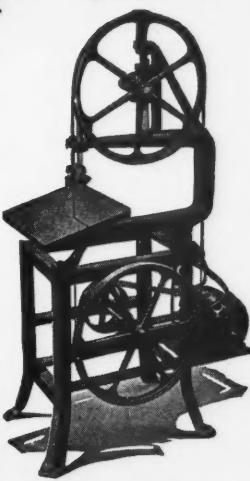
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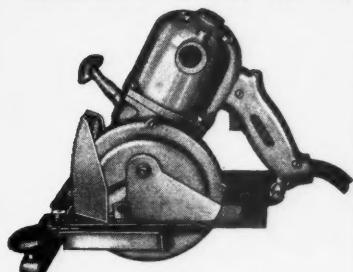
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SAFETY SAW W-6**

An electric saw that's so light and well-balanced it's easy to carry and use anywhere, yet so powerful it will cut most of the members used in house construction.

6" blade cuts 2" stock. Universal motor—seal type ball bearings make it free running. Easy, quick gauge adjustment for depth of cut.

This saw is making "short cuts" for hundreds of builders every day. It, and other Stanley Safety Saws with capacity up to 6", are described in Catalog 64M. Ask your distributor for a demonstration, or write for the catalog.

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TRAIL-SMITH — Two wheel trailer-type end-discharge mixer.



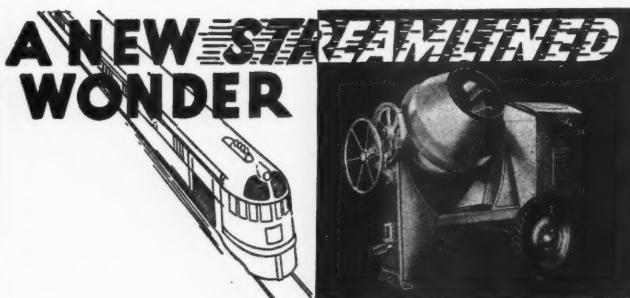
SMITH 10-S
NON-TILTER — New 4-wheel end-discharge mixer.



You're sure to win with these four fast modern mixers. Each one is an "ace" — built by the same engineers who designed the famous Smith BOULDER DAM mixers. For 37 years, Smith Mixers have stood ace-high in the opinion of contractors everywhere and the same dependable mixer performance is available to you today. Before you bid — investigate the Smith . . . Write for literature.

THE T. L. SMITH COMPANY
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**SMITH
MIXERS**



The MIXER SENSATION of 1937

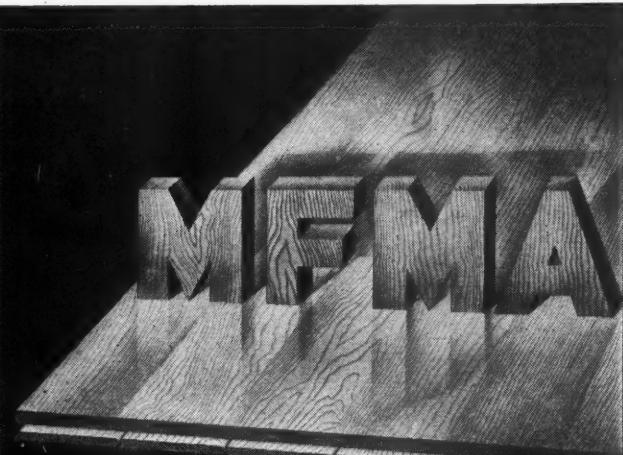
Builders! Here's the "tops" in Mixers for 1937. It's the new Wonder 3 1/2 "Standard." Built for speed in mixing and moving. Rides on Pneumatic Tires—Rolls on Timken Bearings—spring mounted for long life. It's a world beater!

Write Today for Our 25th Anniversary Catalog

See pictured the latest equipment in the building field. CMC Mixers all sizes—Wonder Tilting Mixers—Plaster Mixers—Hoists—Pneumatic Tired Concrete Carts—Wheelbarrows—Saw Rigs—Pumps!



CONSTRUCTION MACHINERY CO.
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The trade-mark MFMA on Maple Flooring guarantees it to be all Hard Maple of the grade stamped thereon and certifies that it conforms in every respect to Association standards of quality and millwork.

This trade-mark is your protection against the substitution possible when you specify merely "Maple Flooring." By specifying "MFMA Maple," you insure quality stock and floors of maximum uniformity and service that will build your reputation for satisfactory work.

See our catalog data in Sweet's, Sec. 17/66. Our service and research department will gladly assist you with your flooring problems. Write us.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1781 McCormick Building, Chicago, Ill.

Ford Methods Bring Lower Costs

(Continued from page 44)

LINOLEUM—Sloane-Blabon inlaid linoleum cemented over hardwood floors—kitchen and baths. Counter tops and splash backs of kitchen cabinets covered with sheet rubber.

DAMPERS—Portland Foundry Co. Atlantic face-controlled rotary dampers, ash dumps and cleanout doors.

HARDWARE—Colonial hardware by Lockwood Hardware Co. Lead flashing for cornices, copper flashings and roof hardware and nails by Wanamaker Hardware Co.

CONCRETE—8-in. concrete basement walls 2,000 lb. to the sq. in. strength concrete, using Lehigh Portland cement. Basement floors 5 in. thick.

MEDICINE CABINETS—Columbia Metal Box Co. cabinets with copper-backed mirrors and razor blade slots.

DOWNSPOUTS—Galvanized Toncan, square rain-water downspouts.

HOT WATER STORAGE TANK—Whitehead Metal Products Co.

SHADES—Hartschorn shades and rollers.

WALLPAPER—Richard E. Thibaut, Inc.

PLASTER MATERIALS—Certain-Teed Products Co.

An unusually high grade of concrete is obtained on the Arlmont houses. Builder Rausch has applied his engineering principles of large-scale construction to his concrete making and uses the water-cement ratio method of controlling his mix. The result is a close-textured, watertight 2,000-pound concrete. Form work costs are greatly reduced by the use of large panels of plywood which are used over and over again. These forms produce a very smooth wall, which is another advantage.

The entire project is laid out with care and skill. The architects are Leland & Larsen of Boston. The 70 acres that make up the project lie on a main highway close to Boston, but the project itself is so laid out as to completely eliminate traffic dangers. A park-like strip separates the development from the main highway and the blocks are laid out in long rectangles which minimize flow of traffic. The houses are set irregularly on the plots and the ten different styles are varied in their placement to give variety and picturesqueness to the development. The developers consider traffic dangers to children one of the biggest obstacles to modern home developments and feel that the layout they have adopted is a great incentive to people with children to live there. The Arlmont project is well financed and the board of directors includes such prominent men as Charles Francis Adams, vice president; Clement Titcomb, treasurer; William A. Coolidge; Samuel Hoar; Thomas Whiteside; Carl Dennett.



Seven Steps to Success

(Continued from page 71)

be more easily renewed or extended than they can be removed or changed in character, restrictions should not be made to prevail too far into the future—perhaps ten years would be fair, although varying types of restrictions would make reasonable, a duration of greater or lesser time.

A good restriction for any area is one which will provide for construction of long-life homes. There are fundamentals of good construction that do and should apply to all types of houses, whether they be frame, stucco, veneer, solid brick walls, steel, or built with some of the newer building materials—and any given area is sure to become increasingly valuable if protected against homes being built today that will be a blight on the community two or three years hence.

Racial and/or color restrictions are important, but must be studied according to individual areas, range of price brackets, and local feeling. However, values in any com-

(Continued to page 118)

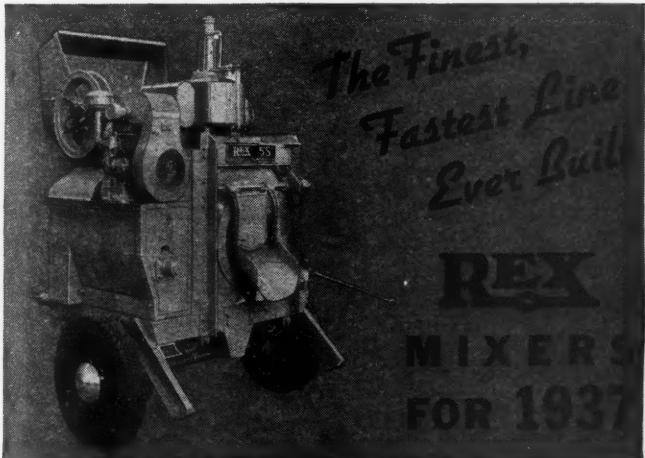
**"SURPRISING how quickly
we can
set up..."**



"It is surprising how quickly we can set up for making special bevels, cuts, mouldings, etc.," writes a DeWalt user from Chicago. "We have not as yet found a job which could stump this machine, in spite of the fact that many new problems come up every day."

QUICK change over from one job to another means lower costs on the job—extra profits. A DeWalt often pays for itself on the first job. Write for completely illustrated folder showing its many operations.

DEWALT PRODUCTS CORPORATION
268 Fountain Ave., Lancaster, Pa.



As new in performance as they are in appearance, these Rex Speed Mixers for 1937 are the finest, fastest line ever built. They are built for fast towing, fast handling, fast charging and discharging in the production of Rex Quality Concrete.

You'll like their new trim lines and you'll like their performance even more. Complete line 3½ S to 14 S—all available with pneumatic tires—all drum models, end and side discharge—all equipped with the Rex Shimmy Skip. See us or write for new 1937 Catalog and Prices.

Chain Belt Company, 1621 W. Bruce St., Milwaukee, Wis.



**CHAIN BELT COMPANY
OF MILWAUKEE**
Speed Mixers



Designed by Randolph Evans, Architect

THE homey appearance of a Certigrade Red Cedar Shingle exterior—the natural beauty of the wood . . . deep shadows which soften horizontal lines . . . random widths—appeal strongly to both men and women. High insulation value, durability, low first cost and absence of repair expense are other Certigrade values appreciated by both builder and buyer. Certigrade Red Cedar Shingles are handled by recognized lumber retailers everywhere. Red Cedar Shingle Bureau: Headquarters, Seattle, Washington; Canadian office, Vancouver, B.C.

Insulate as you decorate!



A Fitzgibbons Steel Boiler in a home, is like a Sterling mark on silver—it shows the quality product.

The Fitzgibbons Steel Boiler will give quick, low-cost heat with oil burner, stoker, gas burner. It will give year-round domestic hot water with no storage tank. It permits of adding "Split-System" air conditioning at any time by the use of its companion unit, the Fitzgibbonsaire. Get full information. **WRITE NOW.**

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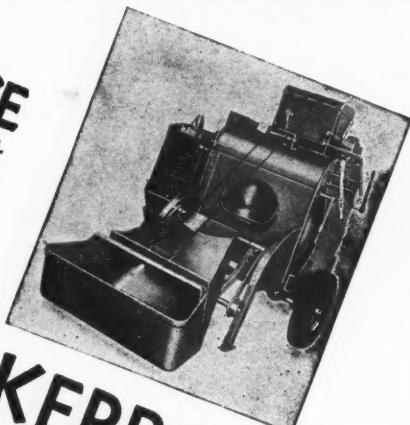
Now—a quality rubber-tile flooring—pre-set on felt—for modernization or new construction of all kinds—costs no more than good grade linoleum. Wide range of colors and designs. Conveniently packed. Exceptionally easy to lay. Suggest it to your prospects. A good profit on every installation. Write for details and illustrated booklet.

WRIGHT RUBBER PRODUCTS CO.
1603 Layard Ave.

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WRIGHT RUBBER TILE

7-SE
Also avail.
able in 5
and 10 ft.
sizes.



KNICKERBOCKER Trailer-Type Mixers

With low center of gravity, they tow easily, stand rigidly on the job. Large drum diameter means fast, thorough mixing. Large openings mean quick charging and discharging. Wide, steep leading skip eliminates skip shaking and pounding. Money-making machines on bridge, culvert, sidewalk and foundation work. Write for folder.

THE KNICKERBOCKER CO.
605 LIBERTY ST.
JACKSON,
MICH.

Seven Steps to Success

(Continued from page 116)

munity may be enhanced or adversely affected by a program of *carefulness* or *carelessness* in the selecting of home buyers who *will* or *will not* fit into the economic community life of any given area.

Congenial neighbors are *essential* to happy, contented home ownership, and, therefore, any builder will do well to consider very carefully this question of *neighbor desirability* before selling to any prospective home buyer.

A very real and vital problem is immediately before us when we reach this part of our subject.

If we plan a sizable home building program, we must begin by facing the fact that we are engaged in a business which calls for investment of funds in huge amounts and in the average sale of a home, comes back to us over an extended period of time.

Here, let me say that the Federal Housing Administration is at this time providing a tremendous and invigorating impulse to the home building business, and is doing a real piece of constructive work. However, the thoughts which I am privileged to offer you are based largely on an experience of about forty years and are, accordingly, based upon the financing and selling factors available to the builder over the long pull period covered by my own experience.

That you may be more fully informed concerning the advantages currently offered by the Federal Housing Administration, I recommend that in addition to the booklets already referred to, you secure and read carefully the following pamphlets prepared by the Federal Housing Administration:

1. "Technical Bulletin No. 4," and
2. "Principles of Planning Small Homes."

The market for 1st mortgages, for home building operations, is usually found, of course, in banks, trust companies, building and loan associations, life insurance companies, and mortgage brokerage houses, and currently in a large measure (through the impulse given to such companies by reason of the insuring of mortgages) by the Federal Housing Administration. For the past few years, financing of home building projects has been rather restricted, but more flexibility is becoming apparent and credit in this market may be said to be becoming more easily available.

This entire question, of the availability of *credit* to the home builder, is a matter of outstanding importance. No credit—no operating funds. The *quantity* builder must have plenty of cash—cash to cover that part of the cost of land and building which cannot be borrowed through the medium of first mortgage; cash to install street improvements by private contracts; cash with which to pay all bills promptly and so to maintain credit, and cash to enable the builder to sell on easy payment terms and thereby increase his sales volume.

In the building of a credit standing equal to the job of acquiring adequate operating funds, the builder must build *not only homes* but he must *build a record for sound building construction*.

The builder of homes who has available a sufficient cash reserve to be in a position to assist his buyers during a period of temporary adversity, will find that he is in possession of a powerful asset, as such ability will save many a sales contract which would otherwise be lost.

Long time payments create sales volume, but a builder's paper profit will not materialize unless the quality of his construction is such as to give satisfaction to the home buyer, not only as he puts his name on the dotted

(Continued to page 120)

MONARCH

Portable Treadle Saw

No. X23

Sturdy • Compact • Self-Contained

\$115.00 COMPLETEWITHOUT MOTOR
F.O.B. HACKETTSTOWN, N. J.

Tubular construction makes it light and rugged.

Substantial ball bearings. Saw may be locked in any desired position, or operated by treadle, as desired.

Available with gasoline engine or arranged for belt drive.



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SAW MILL MACHINERY CO.
Makers of Woodworking and Saw-Mill Machinery
60 MAIN STREET HACKETTSTOWN, N. J.



WILLIS SKYLIGHTS

have long been popular among contractors everywhere . . . because they're dependable. They're made in all styles and sizes, with and without ventilation. They're made only of the best materials, by workmen of long experience and are guaranteed not to leak. There's no "after grief" to eat up your profit on the installation.

Show your clients how they can save money and improve working conditions by *more daylight, more fresh air . . . both in new building and remodeling operations.*

WRITE FOR SKYLIGHT CATALOG

THE WILLIS MANUFACTURING CO.
Galesburg, Illinois

"Standard for almost Half a Century"



A HANDY PRECISION TOOL for JOB or FACTORY

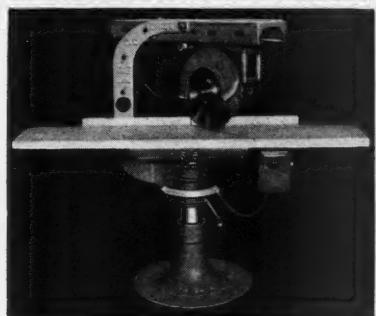
EASY ROLLING CARRIAGE SPEEDS PRODUCTION



Miter Sawing



Bevel Cross-Cutting



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Compound Miter Sawing



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Mortising Timber

Sawing is BIG Operation on every Construction Job

★ ★ ★

Speedy set-up, easy handling and positive accuracy—all essential in minimizing costs, to increase builders' profits.

★ ★ ★

This new Stetson-Ross TX24A radial handy saw "fills the bill"!

WRITE for DETAILED INFORMATION

Stetson-Ross Machine Co.
Seattle, Wash., U. S. A. Manufacturers

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Every item in our line has been designed by experts, not only to provide all the detailed information necessary for the prospect, but to build sales for you at the same time. All are so reasonably priced that you can afford to give them to wide distribution. To convince you of their effectiveness, we are offering you this specially priced

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1 copy "Practical Small Homes" - 3rd ed. (31 house plans, 4 garages).....	reg. .60
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1 copy "What to Make with Wood".....	reg. .10
1 set Specifications (Form of Agreement between Contractor and Owner—11 printed pages).....	reg. .25

Regularly priced at..... \$3.20

Special Introductory Offer, post-age paid, check with order..... \$2.50

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Veribrite - a feature of "America's Finest Kitchen" - designed and shown by the Peoples Gas Light & Coke Co., Chicago.

ANY SIZE-ANY SHAPE-ANY COLOR

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PORCELAIN ENAMELED
SINKS

It is easy to plan a modern kitchen when a Veribrite Porcelain Enamelled Sink can be built without joints to fit any specifications to cover the cabinets of the whole end of the kitchen, resulting in a clean, beautiful and colorful installation. Veribrite is durable, long-life, acid-resisting porcelain fused on heavy gauge Armco Iron. Veribrite Sinks are answering the modern kitchen needs for builders. Write for special opportunities for builders offered by the use of Veribrite Porcelain Enamelled Sinks. Veribrite Sink individualizes each kitchen.

FREE! A new Veribrite color folder will be sent on request.

GENERAL PORCELAIN ENAMELING & MFG. CO.
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Try One of these Electric Saws

Speedmatic Electric Hand Saws are built to take it . . . no rattling . . . just day in and day out dependability . . . easy one hand operation . . . quick depth and angle adjustment . . . which means faster work and more profit. Ask for a FREE trial . . . you be the judge.

Speedmatic Floor Sanders Speed the Job

The last word in efficient and dependable design. Powerful . . . high speed . . . easily portable . . . 22 exclusive features. Try one . . . plug it into nearest outlet . . . you judge the results.



WRITE for complete details today!

The PORTER-CABLE
MACHINE COMPANY

1721-2 North Salina St.

Syracuse, N. Y.

Seven Steps to Success

(Continued from page 118)

line, but through the long years covered by his contract.

Mortgages made at the outset with comparatively little effort, may not be renewable at maturity, unless the quality of a builder's construction is such that the home will stand straight and true, and remain attractive through a long pull of years. A reputation for good construction will assist materially in making mortgage money available to a builder. Profit prospects will be enhanced, if we, as builders, keep these thoughts in mind.

Careful study of plans for each home, before a hole in the ground is started, will save time and money. The mere fact that the front elevation of a home is attractive, is not sufficient. Carefully study such items as height of basement, furniture layout, the way doors should swing so as to interfere least with furniture arrangement—see that all rooms are of proper size in relation to other rooms—a house with a beautiful living room but containing "dinky" bedrooms or bad kitchen layout will be "found wanting" by your prospective buyers.

Assuming the availability of competent foremen for the various departments or branches of building construction, it is fair to say that the fewer subcontracts awarded by the builder, and by the same token, the more work done by day labor under the supervision of the builder's own foremen, the lower will be his construction cost, and the greater his profit, because every subcontract awarded assumes a profit to the subcontractor, which profit may be saved if the builder does this work with his own mechanics. More than this, a builder doing his own work, properly supervised, has greater control over the amount of work delivered each day by each mechanic, and more direct control over the quality of workmanship.

Insofar as possible, the builder should arrange his construction program so as to have completed homes ready for delivery at the peaks of market activity.

Of course, always, but especially in peak wage areas, (and Chicago is the country's highest peak, in this respect) the builder must depend for construction economy on the careful study of bids submitted by responsible subcontractors, and on securing mechanics who are not only skilled in the use of their respective tools, but who are also willing to deliver a real day's work. My personal experience of nearly forty years in building homes in the Chicago area prompts me in fairness to Chicago union labor, to say that most mechanics in the various trades are skilled and do deliver a real day's work. On this basis, a given wage rate per hour may be made more reasonable by such skilled workmanship and making sure that competent and willing workers are employed.

A constant watch must be kept on the subject of trends. Trends in degree of demand volume, because greater cost economies are available by virtue of increased volume, if properly supervised. Trend in the public preference for types of homes. Trend in the relative popularity of various building materials. Trend in labor and material costs (up or down). A constant finger on the pulse of increasing or decreasing cost is vital, for to be caught with long time commitments on a decreasing building cost market would be unfortunate. While, on the other hand, to be protected on a long time commitment basis in an increasing cost market places the builder in a position of definite advantage.

At the present time there is an epidemic of new types of building materials, some good, some bad, some proven as to permanence and value—others wholly untried. New materials and methods must be studied. In general, it is

(Continued to page 122)

MONEY-SAVING WALL PAINT

MURAL-TONE is a quality wall paint usable on almost every sort of interior surface—plaster (even when green), cement, insulating wall boards, concrete, etc. Ideal for either new or old construction.

The perfected blend of casein and lithopone, in heavy, paste form. One gallon, thinned with water, yields one and two-thirds gallons of paint. Covers as much as a thousand sq. ft.

You save on *time, labor and materials*. One coat of MURAL-TONE covers and hides on most surfaces.

Users report savings on light-bills as high as 33½% with White MURAL-TONE which is 90% light reflective. Comes in 10 tints and 12 deep, Positive colors.

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mural-tone
The Money-Saving Paint
in the Orange Can

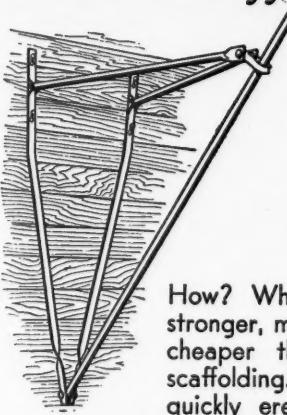
DRIES IN FORTY MINUTES
ADHERES TO UNSEASONED PLASTER

SINGLE COAT COVERS ON MOST SURFACES
WILL NOT LIME-BURN
CUTS COSTS 25%

A MURALO PRODUCT

Reliable Scaffold Brackets

SAVE
YOU
MONEY



How? Why? Because they are stronger, more dependable and cheaper than costly wooden scaffolding. Because they are quickly erected, quickly taken down. Because you can use

them on wood or stucco. No wonder they soon pay for themselves. Thousands of builders have used them for years.

Let us prove their value. Send for catalog—then ask us to ship first pair C.O.D. for your inspection and trial.

Reliable Jack Company, 1401 West Second St., Dayton, Ohio

RELIABLE
SCAFFOLDING BRACKETS

STEEL

of Every Kind . . . for
Every Purpose . . . in
Stock . . . Ready to Use

All shapes, kinds and sizes of steel are carried
in Ryerson stocks for immediate shipment . . .
Unusual facilities for cutting, handling and shipping
assure accuracy, dependability and speed.

PRODUCTS INCLUDE:

BARS STRUCTURALS SCREW STOCK SHAFTING STAINLESS
SHEETS ALLOY STEEL TOOL STEEL TUBING
PLATES Write for the Ryerson Stock List
JOSEPH T. RYERSON & SON, INC., Chicago, Milwaukee, Buffalo, Boston, St. Louis
Cincinnati, Detroit, Cleveland, Philadelphia, Buffalo, Boston, Jersey City

RYERSON

Proved the Best by Test
TO MAKE BIG MONEY AND EXTRA PROFITS
for Contractors for Over 40 Years

The Improved Schlueter greatly increases YOUR PROFITS because * It cuts faster and works easier. * Surfaces either New or Old floors * Works right up to the quarter-round * Improves your work. * Picks up all dirt and dust, Leaving a ballroom finish on any floor. * Saves on Labor. Saves on Floor Finishing Materials. * Soon pays for itself out of Savings. The high-speed fast-cutting resilient rubber covered roller automatically conforms to all floor irregularities, without extra weight over drum or intricate manipulation of levers by operator. Ball Bearing equipped throughout. Full V-Belt drive. 110 or 220 volts, uses either, merely throw switch.

DON'T DELAY. TRY
IT ON 5-DAYS
FREE TRIAL



5-YEAR
Unconditional
GUARANTEE

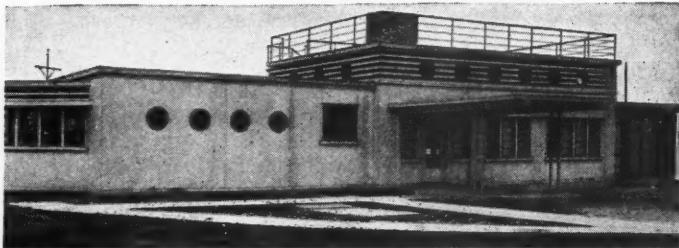
MAIL COUPON TODAY
LINCOLN SCHLUETER FLOOR MACHINERY CO.,
222 W. Grand Ave., Chicago, Illinois.
Please send full details of your 5-day FREE Trial Improved Schlueter Offer. Also Tell Me How I can own it. Interested in Time Payments.
Name.....
Address.....
City.....

237

State.....

DURAPLY

PROVES IT CAN "TAKE IT" AT THE WATER FRONT



DEFIES SUMMER SUNS AND WINTER STORMS

The Chicago Yacht Club...with outside walls of Duraply exposed to temperatures from 90 above to 19 below...to rain, snow, ice and wind...demonstrates the weather-proof quality of this amazing new resin-glued plywood. Available in panels up to 12 feet wide and any length required...providing unusual strength as well as lifetime perfection of surfaces...Duraply multiplies the alert builder's opportunities to develop profitable business. Write for full details.

Algoma

THE BETTER PLYWOOD

ALGOMA PLYWOOD & VENEER COMPANY
112 Wolf River Rd., Algoma, Wis.

Cincinnati, 634 Eden Park Entrance.....Cherry 7823
Chicago, 1234 N. Halsted Street.....Diversey 4342
Cleveland, 5400 Brook Park Road.....Shadydale 1400
Detroit, 355 E. Woodbridge Street.....Cadillac 2472

Contractors and Floor Men Are Switching To REID-WAY PROFESSIONAL

Here's the floor surfacing machine you have been looking for. It does superior work without excessive weight, bulky design or unnecessary mechanical gadgets. The Reid-Way Professional "8" has ONLY TWO MOVING PARTS (sanding drum and separate vacuum motor)—an exclusive feature. There are NO GEARS, BELTS, CHAINS or PULLEYS. In fact, there is practically nothing in this outstanding sander to go wrong and cause maintenance expense. And only Reid-Way is so designed that it will work directly up to the quarter-round on EITHER SIDE of the machine. The Reid-Way excels in every respect.



Fast-Powerful-Thorough

The Reid-Way Professional "8" has the combined speed and power to do thorough, extra fine work. Perfectly balanced sanding drum eliminates waves and chatter marks. Its rugged construction will stand years of hard usage. It's the sander contractors and floor men are choosing.

Write for full details

The Reid-Way Corporation
2931 First Avenue S.E.
CEDAR RAPIDS, IOWA

Seven Steps to Success

(Continued from page 120)

fair to suggest that new materials should be value-proven and time-tested before we builders may feel safe in adopting them. You and I as builders will probably act wisely if we stick pretty closely to the plan of least resistance, which plan lies along the line of using products generally accepted by the public as having proven their quality and long life. As an example to illustrate my thought, may I say that I believe good steel houses can be built, and personally, I believe, can be built to last thru many, many years, but, I also believe it to be the business of the producers of steel and iron to promote their product, and to build into the minds of the public, into the minds of our potential home buyers, a *desire* for steel homes, and that only when the public mind is *sold* on steel houses should we build them. The same logic applies to any new departure in home construction ideas or materials.

It is both a trouble saving plan, as well as economy, to build well, (and here I know I am guilty of repetition, but justifiably so,) to build well both as to the homes erected and the character of street improvements installed. If we must build a home to sell within a given low price bracket, let it be a smaller, good home, rather than a larger, poorly constructed shell. Build real street pavements of ample thickness and reinforcing; build adequate sewers, large enough to contemplate future as well as immediate demands upon their capacity and large enough and so engineered as to prevent flooded basements. Install street lighting systems that function fully, that give enough light to discourage accidents or holdups. Again, the more of these improvements you can afford to install and pay for, and the fewer burdens of special assessments placed on the shoulders of your home buyers, the greater will be the volume of business possible, and the greater will be the number of homes *sold to stay sold*.

Building Material Costs

Regarding the cost of building materials, the builder of today has little or no control. Some of these days the builders of this nation will realize that they, as the marketing outlet for all of the building materials manufactured, have a right to greater knowledge of, and perhaps some measure of control over, the market prices of building materials. Organized effort along these lines will sooner or later take form. I entertain the thought that the home builders of this country have before them, in this respect, both an obligation and an opportunity, which, when and if taken advantage of, will result in lower costs of building construction.

At the present time, the home builder is faced with rapidly increasing costs; therefore, (as already indicated), a builder in this area will do well to secure maximum time commitments in connection with bids taken.

Marketing

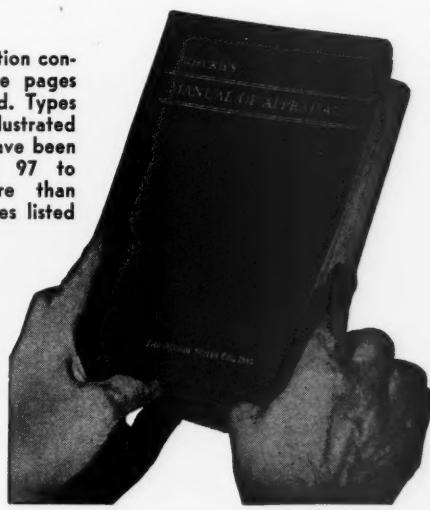
As to this phase of our subject, in building homes for a given market on a given piece of land, the first factor to be studied is that of the *right type* of home for our chosen site, and the *appropriate price bracket*.

At this point we should give mature thought to the earning power of our prospective purchasers. Based on indicated earning power, what can our potential buyers afford to pay for their homes? What is their average monthly income? And what priced home is justified by such earning power? Here, no fixed "rule of thumb" is

(Continued to page 124)

NEW THIRD EDITION NOW READY

The Third Edition contains 50% more pages than the Second. Types of buildings illustrated and specified have been increased from 97 to 147, with more than 7,000 cost figures listed in the tables.



With the new BOECKH MANUAL OF APPRAISALS you can in a few minutes estimate closely the cost of constructing a building. In an hour or so, you can make an accurate, detailed appraisal that will stand up when checked by the HOLC or FHA.

The MANUAL'S cubic foot tables assure a precise cost figure for practically any building. They cover 147 specified and illustrated types of buildings, in 7,000 sizes. A simple system of credits and deductions corrects them for hundreds of variations in specifications.

It gives data and instructions necessary for appraising property on the basis of Market and Income Values, and an original scientific method for valuing land. Percentage figures from inexpensive new Index Control Number service quickly convert MANUAL base prices into present prices of materials and labor in your locality.

1937. 3rd. 400 pages, illustrated, 5½x8½, Fabrikoid; with pad of 25 Work-Sheets; \$6.00.

BOECKH INDEX CALCULATOR

The author tells how to get reliable figures as to local cost of labor and materials, and how to use the charts to find the fractional Index Numbers for each item, which, added up, gives the total Local Index Number.

1936. 40 pages, 21 charts, 8½x11¼, Fabrikoid. With pad of 50 Index Calculation Record Sheets, \$3.50.

Money Back If Not Satisfied

Book Service Department

AMERICAN BUILDER and BUILDING AGE

30 Church Street

New York

IT HAS NO EQUAL

"Don't experiment." Buy "The Master Woodworker." You will find it the most satisfactory machine on the market. Stood the test for 20 years, and is accepted as the standard by building contractors and wood-working industries.

Built in
5 sizes

*Gasoline Engine
or Electric Motor
Drive*



12 Machines in 1
—Will Crosscut,
Rip, Dado, Rout-
ing, Planing,
Boring, Miter-
ing, etc. Reli-
able, Powerful,
Portable.

Catalog and Prices
on application.

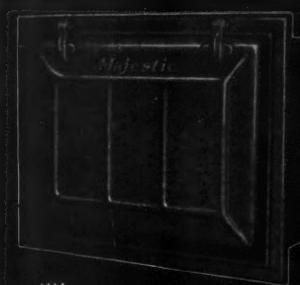
Overhead crosscut;
Underslung rip.

S.K.F.
Ball Bearing
Throughout

*The Original Universal Woodworker
ESTABLISHED 1917*

The Master Woodworker Mfg. Co.
Brush and Congress, Detroit, Mich.

New! Majestic COAL CHUTE



*Style
Quality
Price*

AN All-Steel Chute for the new building market. Frame is constructed of heavy rolled steel, electrically welded at the mitered corners. Sturdy steel hinge lugs securely welded to frame. Body has reinforcing angle formed integrally with top. Anchor lugs punched from side of body to hold chute securely in masonry.



Burglar-proof cam locks automatically, and by attaching chain or cord may be opened from any distant point. Door is die-pressed heavy steel with malleable hinges. Body 8 inches deep. Weight 28 lbs. Finished all over in rust-resisting asphaltum.

Send for literature and prices on this indestructible coal chute.

THE MAJESTIC COMPANY
HUNTINGTON • INDIANA

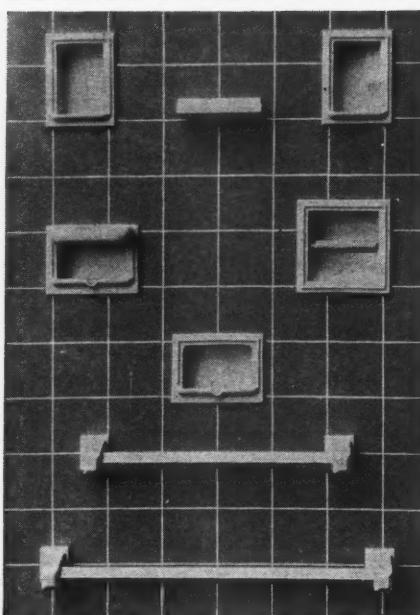
CHAMPION 8-PIECE BATHROOM SET

FULLY RECESS—FLANGED

No screws or hangers needed. To install, the desired location is marked and a hole of proper size cut in the lath and plaster; a coat of Portland cement is applied to the edges of the opening and fixture then set in place. Black, White and Colors. Any construction man can apply them.

Write
for
Descriptive
Folder

For Any Kind of Wall Cut hole—Insert piece, in cement



NEW JERSEY PORCELAIN CO., TRENTON, N. J.
Dept. AB. Makers of Bathroom Accessories Since 1920

Saw-Filing PAYS BIG PROFITS

Earn up to \$2 or \$3 an Hour—
Start in Spare Time

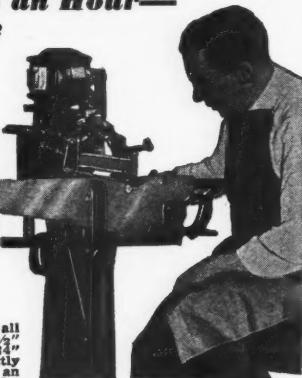
Have your own cash business—be independent! Start at home—build up a steady year-round income filing saws automatically. Easy work—no eye-strain—no experience needed. You can file ALL kinds of saws better and faster than the most expert hand filer, with the

FOLEY AUTOMATIC SAW FILER

The Foley files and joints, automatically, all kinds of hand saws, band saws $1\frac{1}{2}$ " to $4\frac{1}{2}$ " wide, and cross-cut circular saws $3\frac{1}{2}$ " to 24 " in diameter. Every tooth is perfectly uniform in size, height and spacing. You get an average of 50c for hand saws, much more for others.

Carpenter makes Big Extra Money—“I have filed 764 saws in spare time, and have earned \$850 in carpenter work due directly to my saw filing contacts. Anytime I should not get enough work at my regular trade, I could get by on saw filing,” says Louis P. Wadowick, Ohio. “Have operated my Foley Filer 5 years—business better than ever this year,” writes J. W. Veith, Pa.

FREE PLAN—Many other men make big money in spare time or have saw filing businesses of their own. Why don't you? Free Plan shows how to start—no canvassing. Send coupon for full details. No obligation, no salesman will call.



FOLEY MFG. CO. 224-7 Foley Bldg., 11 Main St. N.E.,
Minneapolis, Minn.
Send me FREE PLAN for starting my own saw filing business in spare time with
the Foley Saw Filer, without obligation to me.

Name _____

Address _____

Seven Steps to Success

(Continued from page 122)

adequate—it is widely assumed that a home buyer can afford to buy a home, the price of which is two and one half times his annual income—and that the same man may safely assume a monthly payment obligation equal to one fourth of his monthly pay check. Such general rules fall far short of providing safe rules to govern our sales program. These rules may well be modified in both directions by such questions as these:

1. How old is our prospective buyer, and how many active income producing years may he have before him? What is the buyer's physical condition? And what are his prospects of increasing income?
2. Has the buyer a large part of the proposed purchase price available in cash, or has he very little cash with which to start his program of payments? What life insurance does the prospective buyer carry?
3. How large is our prospect's family?
4. Has our prospect additional family obligations such as the burden of supporting parents?
5. Are the members of the prospect's family of grammar, high school or college age, or one or more in each class?
6. Is the family one in which the children are likely to require funds for higher education?
7. Is the family one of conservative spending habits, or extravagant? Are they habitual installment buyers of merchandise? (I have seen families with monthly incomes of three hundred dollars having greater difficulty in making payments of fifty dollars per month than has another family in making monthly payments of the same amount, where the income in the second instance was one-half that of the first-named family.)

And so, while there are reasonable limitations respecting the relation of a man's income to the home he wants, these personal factors are probably equally important.

To my mind, the best general rule to use in determining the soundness of a proposed sale is this: Consider all of the influencing factors and after applying sound reasoning, then make your decision, if you can, uninfluenced by your desire to put up another “sold” sign.

In studying the market for our home building efforts, we must not be unaware of the fact that even in the low priced home demand there are definite swings or changing trends in the home seeker's mind; for example, at the present time we see definite trend toward white—white paint for frame homes, white painted brick homes—a Cape Cod type of trend is creating volume sales where the builder has sensed this demand and built to meet it. Building what the buyer wants will, of course, reduce selling resistance and reducing sales resistance reduces sales cost and increases profit. This subject of marketing homes, and the creating of appealing advertising copy, is a topic of wide interest and deserves much more time than I have at my disposal.

However, permit me to offer just a few ideas regarding advertising copy and sales approach, which I trust may be helpful. As I have indicated, we can here hope only to scratch the surface of this important phase of the business of home building.

Neatness about one's personal appearance, and orderliness in the appearance and conduct of business in your offices, will favorably impress your prospects. Keeping buildings attractive—all shades pulled to same level—heated in cold weather—well lighted and dusted—are powerful, although sometimes considered commonplace,

(Continued to page 126)



You too can profit by installing SYRA-BORD

—and at the same time give your customer the best there is in rubber floor covering plus the assurance that this job will not curl—warp nor lift at the edges because:

- SYRA-BORD is the only rubber floor covering with the patented tongued and grooved sides and ends which interlocks the joints securely—just like wood flooring—

Servicised Products Corp.
6047 W. 65th ST. CHICAGO, ILL.



**It Pays to Install an
ILG
KITCHEN VENTILATOR**

**INCREASES
SALES AND
RENTAL
VALUES**

Glorify . . . THE KITCHEN

—make an impressive appeal by installing the nationally advertised ILG Kitchen Ventilator, a quality product especially designed and priced for small and large kitchens — the only one made with a fully enclosed self-cooled motor. It's the last word in home modernization, a wonderful sales and rental feature. Send for bulletin illustrating, describing and pricing the complete ILG line.

ILG ELECTRIC VENTILATING CO.
2852 N. CRAWFORD AVE., CHICAGO

ILG Kitchen Ventilator for built-in-the-wall installation. Color: French grey, mirror-finish, metal grill, nickel silver beaded chain. A beauty.



K & E
WYTEFACE
TRADE MARK
STEEL MEASURING TAPES

Easy to clean . . .
easy to read, and the crack-
proof white surface protects the
steel from rust. Ask your dealer,
or write for complete information.

KEUFFEL & ESSER CO.
EST. 1847
HOBOKEN, N. J.
NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO DETROIT MONTREAL

MADE IN U.S.A.

MODERN KITCHEN CABINETRY

OF TIME-TESTED WOOD CONSTRUCTION

• KITCHEN MAID construction is fundamentally sound. *Wood is used where years of experience have proved wood to be best . . .* for sturdy frames, for rigid shelves, for solid doors that open and close efficiently, for backs that seal each unit. Metal is used where metal has been proved superior . . . quite naturally for hinges, pulls, catches, for non-sticking drawers that slide easily on hardwood guides, for grilles, and counter edge mouldings.

Today's Kitchen Maid Cabinetry is practical, modern, colorful . . . flexible and economical. For further data write:

THE KITCHEN MAID CORPORATION, ANDREWS, INDIANA

The Kitchen Maid Corp., Andrews, Ind. Send new catalog and details to
NAME _____ AB-237

ADDRESS

Architect
 Builder

Owner
 Dealer

KITCHEN MAID
ORIGINATOR OF STANDARD UNIT
KITCHEN CABINETRY



Enduring Style—

With graceful SAMSON COLUMNS you can faithfully reproduce the quiet dignity and true tradition of America's own "Colonial." Build with SAMSON COLUMNS for true lasting beauty in protected entrances. Good taste never goes out of style. SAMSON COLUMNS are architecturally correct. Distributed nationally through jobbers.



Write for
Complete lit-
erature and
name of local
jobber.

WASHINGTON
MANUFACTURING
COMPANY
Tacoma, Wash.

"A home without a porch—is not complete".

WALKER — TURNER

MASSIVE CONSTRUCTION •

BIG
TABLE •

AND A
TLTING
ARBOR!

SERIES 1100 TLTING
ARBOR SAW

\$117.50 complete with
full 1 h.p.
motor

The Walker-Turner Tilting Arbor Saw, Series 1100, is designed for heavy work, yet priced within the reach of builders everywhere. It gives you all of the advantages of a tilting arbor, for angle cuts in stock of any length, plus a table 35" x 26", a full horse-power motor, and a 10" blade that cuts through 3 1/4" hardwood with ease. This tool needs no "babying." Use

it steadily on your heaviest work—you'll find it easy to operate, accurate, and far longer-lived than some saws selling at a much higher price. Ask your Walker-Turner dealer for free demonstration and write for the 40-page catalog describing the 1937 Walker-Turner Line. Walker-Turner Co., Inc., 1027 Berckman Street, Plainfield, New Jersey.

Engineered POWER TOOLS

Seven Steps to Success

(Continued from page 124)

items. Models or pictures showing detail of construction are always helpful, because, a home completed before a prospect sees it, may contain many hidden defects, and, therefore, some plan to show what lies behind the plastered walls, or under the ground, or between the walls, is important, and the best way to stress this important factor is by full size details or cross sections of your construction features.

In creating a demand for homes, an appropriate advertising program is always a producer of sales. Of course, the scope and size of our effort in this respect must be governed by the scope and size of our project, and by the degree of receptivity in evidence in our market. Newspaper advertising is our logical medium, although many other types of advertising, (again, too numerous to here treat in detail), are, in varying degree, helpful.

In many instances, particularly if we contemplate large volume operations, the employing of advertising counsel is desirable.

Our large daily newspapers give, to recognized advertising agencies, a discount of 15 per cent. This discount is not available to subdividers and home builders, and usually is all that the advertising agency expects or receives for his time and counsel. In this sense, the creative advertising services of a good agency costs us nothing, and, if we choose an expert in our own field of endeavor, his services may contribute much to the success of our effort.

Advertising copy should not attempt to tell our whole story, but should offer a few outstanding facts, facts which logically should appeal both to the man interest and wife interest; but the reader of our ads must be left with the impression that much remains untold, that many attractive elements of appeal can only be seen and heard when he visits the home you have to offer; that he will be doing himself an injustice and deprive himself of a real opportunity if he fails to get all of the important facts by seeing the real merchandise itself.

It is a frequently occurring mistake, to try to squeeze too much advertising copy into too small a space. Fewer points covered, in larger type, will be a more productive policy.

There are, of course, as you probably know, two distinctly different types of advertising available in our daily papers: Classified and Display. The fundamental differences between these two types of advertising are these: The Classified real estate ads are read by those who have become interested in home buying before they read our ads and who, accordingly, turn to the classified columns when they open their papers. We must always remember that classified advertising cannot be omitted from any comprehensive home building program.

The display type of advertising is primarily intended to arrest the attention of the newspaper reader who is casually reading the news of the day, and who may become a home buyer solely because of having the idea of home owning forced upon his attention through the plan of "hitting him between the eyes" with an appealing ad located in the news section of his paper, and not lost in the classified advertising column on pages which he might never voluntarily read, at least until his home buying interest had been aroused.

In approaching a prospective buyer the salesman's best single piece of equipment lies in his knowing his merchandise, its construction (in detail), and its various acceptable plans of payment. Only if thus well informed will the needed degree of confidence be established.

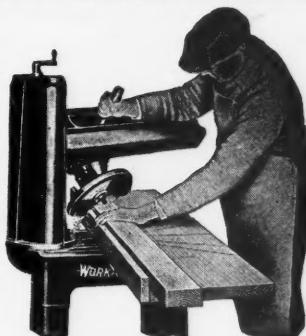
A salesman should not use too many superlatives—

(Continued to page 128)

The Wallace No. 1 Radial Saw is the Machine for Contractors

Greatest Utility for

RIPPING X-CUTTING
DADOING GROOVING
MITERING ROUTING
SHAPING FLUTING



Builders are making new profits, quoting lower prices, doing better work thru the application of this new and modern power saw. Get the "jump" on increased building activity now. Let us furnish you with complete information and prices.—no obligation.

J. D. WALLACE & CO.
136 S. California Ave.,
CHICAGO, ILLINOIS

A BETTER BUY, Because—

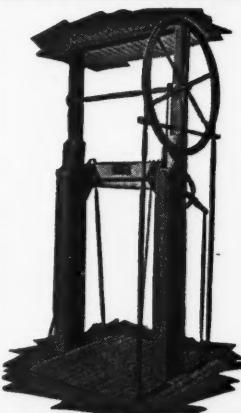
It offers the upward-acting convenience people want. Also, no other door offers all these features . . . continuous angle mounted track—special Kinnear ball-bearing rollers—bolted malleable iron hardware—"Keystone" sealing device—snug-fit closing arm—pre-tested springs—rugged lock. Be sure to have full details.

Built in any size—wood or metal—manually or motor operated.

KINNEAR MFG. CO.
1560-80 Fields Ave.,
Columbus, Ohio



**KINNEAR
R.O.L.-TOP
DOORS**
for Residence, Commercial or Industrial Use.



KIMBALL HAND POWER ELEVATORS

A complete line of efficient Hand Power and Electric Elevators built to suit any requirement.

Fitted for rapid installation in your building. These straight-line-drive machines are little giants of lifting power and are surprisingly nominal in costs.

FREE Engineering Data
Give us your problems and let our engineers help you. Full descriptive literature on request.

KIMBALL BROS. CO.
Council Bluffs, Iowa

Classified Advertising

Rates:

Small letters 50c per word.
Capital letters \$1 per word.

Minimum twenty words.

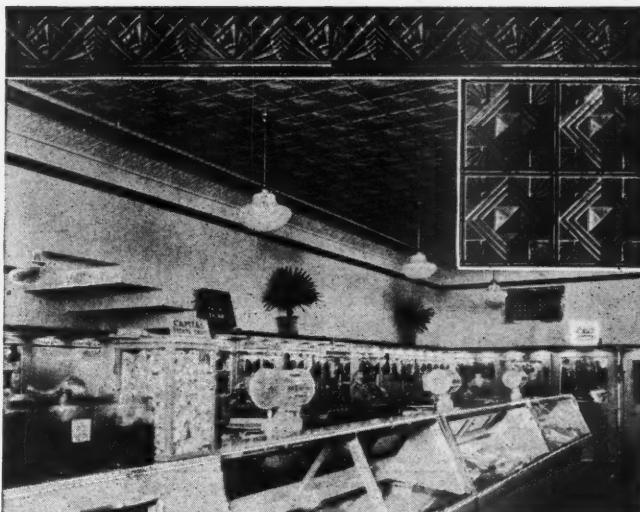
To Insure Insertion Remittance Must Accompany Order

Business Opportunities

For Sale and Exchange

Help and Situations Wanted

PATENTS and TRADEMARKS. Protect your valuable assets. Expert, prompt service: Lester L. Sargent, Registered Patent Attorney, 1115 K Street, Washington, D. C.



Apply

EDWARDS STEEL CEILING

Before the Plaster Begins to Fall

Cracking and scaling of a plastered ceiling or side wall is a danger signal. Either the "key" is broken or the plaster has begun to disintegrate. Dust and chips will dribble down on customers, clerks and merchandise. Falling chunks may result in serious injury and damage suits.

At the first indication of defective plaster apply Edwards Steel Ceiling directly over the present surface. It will prevent further trouble and completely modernize your store without interruption to business.

Write for Catalog 180. Send measurements for estimate.

THE EDWARDS MANUFACTURING CO.
542-562 Eggleston Ave. Cincinnati, Ohio

TRY THEM ONCE

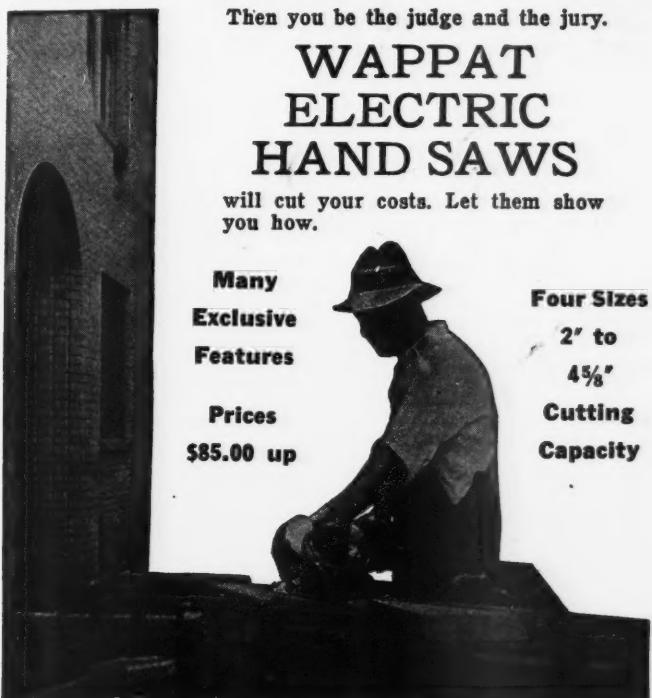
Then you be the judge and the jury.

WAPPAT ELECTRIC HAND SAWS

will cut your costs. Let them show you how.

Many
Exclusive
Features
Prices
\$85.00 up

Four Sizes
2" to
4 1/8"
Cutting
Capacity



WAPPAT
INCORPORATED

7545 Meade St., Pittsburgh, Pa.
Division of
Simonds Saw and Steel Co.

Please tell me more. Size.....

Name

Address

City

KEES Corner Braces



Make Corners Rigid On Old or New Screens



Loose, wobbly screens become as rigid and square as new—and new screens much stronger, when equipped with KEEs pressed steel Corner Braces. They bevel and seal joints against dirt and moisture. Double the life of any light frame. Set of 4 with nails to box. **INSTALL THEM ON YOUR SCREENS NOW!**

FREE Buy them from your Hardware or Lumber Dealer—or Write Us for a Free Sample!

F. D. KEEs MFG. COMPANY
Beatrice Box 93 Nebraska

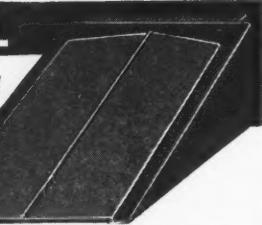
BILCO COPPER STEEL Home Cellar Hatchway

Every home needs the extra safety of a cellar exit, the convenience of an outside cellar entrance. That's why so many progressive architects and builders are using Bilco all-metal Hatchways. Precision made, of copper steel—easy to assemble and install, last forever. Fire, water, decay and termite proof. Can't warp, sag or swell. Work perfectly always. Strong steel doors, when locked, give added security. Ask for literature.

BILCO MFG. CO., DEPT. A, NEW HAVEN, CONN.
STEEL HATCHWAYS—SIDEWALK DOORS

Type 03 for homes in 3 sizes
"A" for openings to 4' 6" long to 3' 4" wide, \$24.
"B" for openings to 5' 6" long to 3' 8" wide, \$26.
"C" for openings to 6' 6" long to 4' wide, \$27.50.
Shipped knocked-down, crated. FOB N. H. Low Frt. rates.

Order Thru Your Dealer or Direct



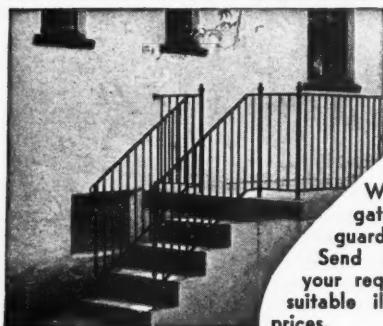
QUALITYBILT DISAPPEARING STAIRWAY

You can make many profitable sales installing this modern convenience in old or new homes. Guaranteed construction—strong—safe—rigid. Nicely balanced for quick, easy operation. Highest quality materials. Lifetime service. Low cost. Gives full use of attic without taking up valuable space in room below. STORED IN ATTIC WHEN NOT IN USE. Ask your lumber dealer or write us for details. Address Dept. AB237



FARLEY & LOETSCHER MFG. CO.
DUBUQUE, IOWA

INSTALL IRON RAILING



BEAUTIFUL PERMANENT

For All Interior and Exterior Use

We manufacture iron fence, gates, iron and wire window guards, chain link wire fence, etc.

Send us measurements showing your requirements—We will forward suitable illustrations—And quote you prices.

CINCINNATI IRON FENCE CO., INC.
3411 SPRING GROVE AVE. **CINCINNATI, OHIO**

Seven Steps to Success

(Continued from page 126)

but should tell a "straight from the shoulder" story relating to the home he is trying to sell.

He should fully relate the advantages of his own merchandise, but must not "knock" his competitors. Customers have a way of inviting a salesman to comment on competitors' offerings. In such a circumstance, let the salesman say, "Well, Mr. Jones, I want to tell you all about what we have to offer, then you see everything that the market in our price range offers. Compare the relative advantages, and then, Mr. Jones, *you be the judge.*" Such a statement, made by a salesman to a prospect, will be most helpful, and will immediately create confidence in the salesman's way of doing business and increase the prospect of closing a sale.

Judge Right Time to Close Sale

While we must not rush our prospects, we must not go to sleep on our sales job, and we must train ourselves to recognize the *earliest moment* at which it is fair to expect to *close* our deal.

Frequently a call made by our prospect *today* may result in a sale *today*—but more often it is fair to expect that a call from our buyer *today* may result in closing *at his home, tomorrow*. (Evening calls on the buyer at *his home* are frequently productive calls—solicit this opportunity.) Unnecessary delay in closing gives too much opportunity for the prospect to talk to *too many people*. It is natural for a man who contemplates buying a home to talk about it, and you may fairly and safely assume that most of the people he talks to will be "knockers." Don't overdo the rush act, but be alert to strike *before the iron cools off*.

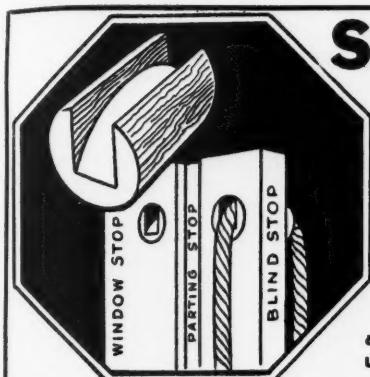
In most families, it is more often than otherwise important to make every effort to *sell* the wife first, then the husband. Both must be *sold*, but in the average case, sales resistance, so far as the husband is concerned, is substantially reduced if the wife is sold and thereby becomes the salesman's ally. Most husbands, pretty regularly do what our wives want us to do.

Let me suggest that you read the book offered recently by Roy Wenzlik, entitled, "The Coming Boom in Real Estate." This book was briefly but effectively summarized in the July, 1936, issue of the Reader's Digest. The other pamphlet referred to earlier in my talk will also be found helpful.

And Now, Concerning Business Integrity and Ideals

In no other line of effort is the need for real business integrity and high ideals more important than in the home building industry.

Fair play between seller and buyer is always important. It's *always* right to conduct *any* business on an honorable basis. In the home building business, however, fair play pays dividends far more extensively and for a longer time than in many other lines of endeavor. Our transactions with our customers must continue thru the years; we must rely upon the buyer of today to produce our buyers for the future. We must provide the elements of contentment which will not exist without fair play in our transactions. We must remember that in land subdividing and developing we are creating *communities, groups*—groups that will be either *for us* or *against us*, and therefore, groups that will become either *powerful assets* or on the contrary, equally important *retarding influences*.



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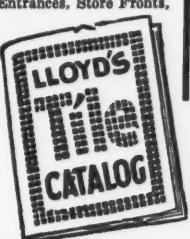
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Our line includes tile for Bathrooms, Kitchens, Vestibules, Mantels, Store Rooms, Entrances, Store Fronts, Bulkheads, or any kind of Tile Work. Also Red, Buff, Grey and other colors of tile, bathroom fixtures, etc.

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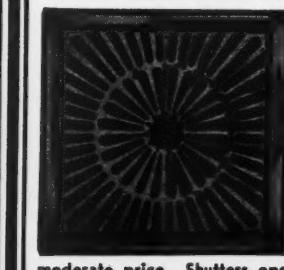
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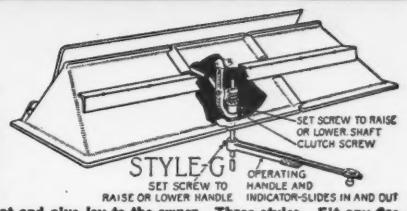
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BUILDING MATERIALS

325—Oak Floors—“How to Lay and Finish Perfection Brand Oak Floors,” a handy size 36-page manual on this important subject; thoroughly indexed, illustrated with photographs and details, and presenting brief specifications.—ARKANSAS OAK FLOORING CO., Pine Bluff, Ark.

326—Wood Paneling—“The Soft, Warm Beauty of Paneling,” an 8-page detail sheet analyzing cost of walls of plaster and of wood paneling, and presenting about 18 schemes for applying wood panels for living rooms, dens, dining rooms, etc., with an important section also on plywood.—THE NATIONAL LUMBER MANUFACTURERS ASSN., Washington, D.C.

327—BrownSkin Building Paper—“Good Building Paper Is Mighty Important,” a new 4-page data sheet recommending numerous uses for BrownSkin Resilient building paper and showing the economy of its use in home building and other construction.—ANGIER CORP., Framingham, Mass.

328—Insulated Shingles—“The Roof of Individuality” is a new 8-page illustrated brochure presenting the distinctive shingles—weatherproof, insulated and rigid, fireproof and in many colors—developed by—WEATHERPROOF PRODUCTS CO., Memphis, Tenn.

329—Wallboard Tile—“Modernize Your Home, Store or Office” is a clever illustrated folder in colors suggesting modern schemes for new walls for bathrooms, kitchens and mercantile establishments; good looks with low cost.—TYLAC CO., Monticello, Ill.

330—Formica Wall Covering—New booklet containing 8 pages and 5 color plates with designs in full color, showing installations and complete directions for installing, featuring wall coverings, window stools, kitchen cabinet tops, etc.—THE FORMICA INSULATION CO., 4671 Spring Grove Ave., Cincinnati, Ohio.

331—Never-Split Toilet Seats—“Catalogue K,” 42 pages, fully illustrated and indexed, presenting the complete line of Never-Split wood and Evernu hard rubber toilet seats. The wood seats are varnished, sprayed and sheet covered.—NEVER-SPLIT SEAT CO., Evansville, Ind.

332—Successful Winter Concrete—“For Winter Construction” is a timely folder

featuring Marquette High Early strength portland cement which is finding favor for winter concreting because it sets up so much faster.—MARQUETTE CEMENT MANUFACTURING CO., Chicago, Ill.

333—Haydite Building Units—“Haydite, the Lightweight Aggregate Building Units” is a booklet of 20 pages telling what Haydite is, giving tests for strength, insulation and acoustical qualities, and presenting recommended details of house construction using Haydite units. Published by the HAYDITE MANUFACTURERS’ ASSN., 718 Scarritt Bldg., Kansas City, Mo.

334—Plastiment—Information regarding this amazing material which correct “the weak points in concrete construction” is presented in a 4-page folder.—SIKA, Inc., 330 W. 42nd St., New York City.

335—Cement and Mortar Colors—“Tamms’ Colorway Brand” is presented in a 6-page data sheet containing formulae and specifications for colored cement and mortar work.—TAMMS SILICA CO., 228 N. La Salle St., Chicago, Ill.

336—Glazed Tile Silos—“Instructions for Erecting the Natco Glazed Tile Silo,” a new 28-page portfolio giving detailed instructions for the design and construction of Natco silos and associated construction. Book of valuable information for contractors and dealers.—NATIONAL FIREPROOFING CORP., Pittsburgh, Pa.

337—Bayley Steel Windows—Information regarding the extensive Bayley line of steel windows, steel doors and operators is presented in the new 20-page handbook, rich in structural details, specifications, sizes, etc.—THE WILLIAM BAYLEY CO., Springfield, O.

338—Ornamental Ironwork—“Stewart Plain and Ornamental Railings,” a new 20-page portfolio of designs of wrought iron railings, brackets, pier lanterns and interior gates to suit the current vogue.—THE STEWART IRON WORKS CO., Inc., Cincinnati, O.

339—Builders Hardware—Catalog No. 26 is a big book of 112 pages, copiously illustrated and thoroughly indexed, presenting the extensive line of hardware of the NATIONAL BRASS CO., Grand Rapids, Mich.

HOME EQUIPMENT

340—Timken Water Heaters—“Plenty of Hot Water” is a well prepared consumer booklet presenting the Timken oil burn-

The publications listed below may be obtained without charge either by using the coupon, listing the numbers desired and mailing to American Builder, 105 West Adams Street, Chicago, or by applying on your business stationery to the manufacturers direct, in which case kindly mention this publication. Either the titles or the numbers may be used in ordering. This list is an editorial feature for convenience of our readers.

ing domestic water heaters. These are available in two types, one with integral storage tank, the other with separate water storage.

Another very attractive new booklet, “Timken Silent Automatic Air Conditioning Oil furnaces,” presents a thorough yet simple discussion of this popular equipment for modern homes.—THE TIMKEN SILENT AUTOMATIC CO., Detroit, Mich.

341—Williams Oil-O-Matic—“The Architect’s Handbook” is a 12-page data sheet giving complete specifications and mechanical details of the Williams Oil-O-Matic line of oil burners. An interesting consumer booklet is also available, “How to Add a Room to Your Home.”—WILLIAMS OIL-O-MATIC HEATING CORP., Bloomington, Ill.

342—Dailleire Conditioning—“Taking the Mystery Out of Air Conditioning” is an extremely readable and informative little booklet of 20 pages telling the whole story of air conditioning for homes.—DAIL STEEL PRODUCTS CO., Lansing, Mich.

343—Automatic Heat with Coal—“The Brownell Stoker,” a new 8-page catalog giving complete specifications, dimensions and installing data on this automatic stoker.—THE BROWNELL CO., Dayton, O.

344—Sewage Disposal Systems—Bulletin H describes the Kewanee system of septic tank sewage disposal showing construction and workings of the plant of interest to both home owner and architect; fully illustrated.—KEWANEE PRIVATE UTILITIES CO., Kewanee, Ill.

345—Goulds Pumps—A new catalog, attractively bound in a stiff cover, contains 112 pages covering a complete range of water systems, hand pumps, miscellaneous power pumps and accessories. Also valuable information on computing water requirement, friction loss in piping, head and pressure equivalents and similar useful items.—GOULDS PUMPS, Inc., Seneca Falls, N.Y.

346—Prefabricated Air Ducts—“Lamneck Manual” is a new portfolio of designs for the installer of forced air ducts, fittings and registers of the simplified Lamneck prefabricated type. An accompanying catalog also presents the complete line of Lamneck registers and simplified furnace fittings.—LAMNECK PRODUCTS, Inc., Dublin Ave., Columbus, O.

347—Fireplace Furnishings—A Colonial fireplace portfolio of designs of andirons, fire tools, fireplace construction, screens

and other fireplace fittings is an attractive 20-page catalog illustrated and indexed for ready reference.—COLONIAL FIREPLACE CO., 4603 Roosevelt Road, Chicago, Ill.

348—**Ebco Dishwashing Sinks**—A new 4-page data sheet presents a new Ebco design, fully illustrated and with complete specifications and details.—THE EBCO MANUFACTURING CO., Columbus, O.

349—**K-Venience Closet Fixtures**—“System Goes Into the Clothes Closet” is a very appealing new catalog of 16 pages presenting an ingenious line of wardrobe telescopic clothing carriers, extension rods, tie racks, shoe racks, hat racks, trouser and skirt hangers, shelf bars, garment hangers, etc.—KNAPE & VOGT MANUFACTURING CO., Grand Rapids, Mich.

350—**E'Zie-Lift Garage Door Hardware**—New folder giving full information regarding this popular new Willis item which modernizes old garage doors as well as adding the finishing touch to new garages.—WILLIS MANUFACTURING CO., Inc., Galesburg, Ill.

351—**Hold-Heet System of Air Conditioning**—Hold-Heet air conditioners and how they are installed for complete winter air conditioning and summer cooling for the average home heated with a warm air furnace is presented in a new series of data sheets.—RUSSELL ELECTRIC CO., 340 W. Huron St., Chicago, Ill.

CONTRACTORS' EQUIPMENT

351A—**Taylor Collapsible Horses**—Information regarding the pressed steel connectors for saw horses and work horses put together on the job. The legs wedge into these steel sockets, making a strong, convenient piece of equipment. Brand your name on these saw horse members and on all shovels and other tool handles with the Everhot branding equipment offered by the same people.—EVERHOT MANUFACTURING CO., Maywood, Ill.

352—**Stetson-Ross Handy Precision Tool**—Information regarding the Stetson-Ross TX-24 radial saw, a handy precision tool for job or factory, portable or stationary, is presented in the new 8-page catalog fully illustrating the various woodworking operations handled on this ingenious piece of power equipment.—STETSON-ROSS MACHINE CO., Seattle, Wash.

353—**Driver Power Tools**—Catalog G-7 presents the 1937 models of the Driver engineered power tools. It is a handbook of 48 pages, illustrates admirably the extensive line of woodworkers offered, and shows many examples of the work that these machines perform.—WALKER-TURNER CO., Inc., Plainfield, N.J.

354—**Parks Woodworkers**—New data sheet presents specifications of the Parks heavy duty 10" bench circular saw, the Parks heavy duty 12"x4" thickness planer, two very useful machines.—THE PARKS

WOODWORKING MACHINE CO., Cincinnati, O.

355—**Multiplex Woodworkers**—“Red Star Products” is a new loose-leaf catalog presenting the Multiplex woodworker, metal worker and ceramic cutter. Catalog shows complete accessory lists.—RED STAR PRODUCTS, Inc., Cleveland, O.

356—**Anchor Mixing Boxes**—A demonstration of how wooden boxes waste while steel boxes save is given in a data sheet presenting the Anchor line of mortar boxes, both sloped end and square end types.—ANCHOR MANUFACTURING CO., 2131 S. Turner Ave., Chicago, Ill.

357—**Bulldog Spacer Grab**—Information regarding this ingenious tool which at last provides a quick, positive way of retrieving wood spacers in concrete form work.—BULLDOG PRODUCTS CO., Kansas City, Mo.

358—**Mall Concrete Vibrators**—New 4-page circular gives information regarding this new and efficient equipment which produces better concrete.—MALL TOOL CO., 7740 S. Chicago Ave., Chicago, Ill.

359—**Economy Forms**—Details of the steel forms for concrete work, the “Economy” line, are presented in a new 4-page data sheet with photographs of some of the work produced using these forms.—ECONOMY FORMS CORP., Form Engineering and Rental Service, Des Moines, Ia.

360—**How to Measure a Concrete Mixer**—A novel True Value Gauge has been created consisting of a sliding rule with a series of percentages marked thereon so that 50 fundamental questions regarding a concrete mixer are automatically answered. It is a “slide rule” of mixer efficiency.—RANSOME CONCRETE MACHINERY CO., Dunellen, N.J.

361—**Boss Mixers**—The 25th Anniversary Edition of the Boss catalog presents A.G.C. approved mixers, single and double drum hoists, concrete carts and gravity type dump buckets. It is a catalog of 24 pages.—THE AMERICAN CEMENT MACHINE CO., Inc., Keokuk, Ia.

362—**Insulated Natural Stone**—Information regarding a new concrete unit faced with natural Briar Hill sandstone and the necessary molds and equipment for producing such building units is offered by the INSULATED NATURAL STONE CO., 2719 N. 17th St., Milwaukee, Wis.

363—**Besser Concrete Products Equipment**—Full information regarding equipment for manufacturing light weight concrete units is offered by an old established firm.—BESSER MANUFACTURING CO., Alpena, Mich.

364—**Ornamental Concrete Furniture**—A 12-page illustrated handbook shows molds for making bird baths, sun dials, garden and porch furniture, flower vases, balusters, chimney blocks, lawn benches, etc.—CONSOLIDATED CONCRETE MACHINERY CORP., Alpena, Mich.

OF SPECIAL INTEREST

364-A—**A Sealer for Douglas Fir**—“Here It Is!—the Solution to the Fir Plywood Decorating Problem!” is the reassuring news carried by an interesting little folder regarding the Laux Rezite Sealer. This is the material that is said to make “soft wood finish like hard wood,” insuring against grain-raise and assuring satisfaction with subsequent coats of paint, stain, enamel or varnish.—I. F. LAUCKS, Inc., 911 Western Ave., Seattle, Wash.

364-B—**Insulation Handbook**—A new 30-page handbook for builders, architects and air conditioning engineers has been prepared “to give helpful information on insulation and its use in building construction.” The table of contents shows ten chapters; detail drawings in large size show recommended construction.—WOOD CONVERSION CO., St. Paul, Minn.

364-C—**Kenmar Copper Shingles**—Portfolio of samples and data under the title, “Kenmar Roofs of Solid Copper Shingles,” 12 illustrated data sheets, with pockets in cover containing samples of this new style roofing.—THE NEW HAVEN COPPER CO., Seymour, Conn.

American Builder,
105 W. Adams St.,
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(February, 1937)

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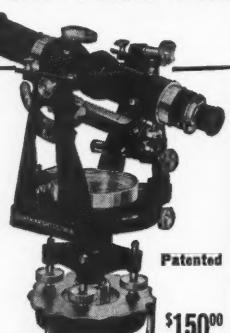
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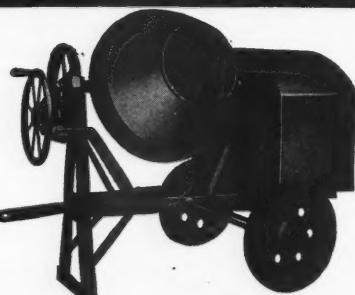


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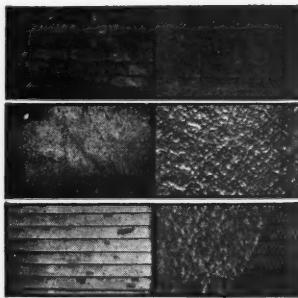
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COLORCRETE INDUSTRIES, INC.
 500 Ottawa Ave., Holland, Michigan



Plan For a Modern Basement

(Continued from page 67)

automatically increase the rate of coal feed and draft so as to keep a uniform temperature at all times. Stoker salesmen cite the advantages of sustained heat, as compared with intermittent operation of a heating plant, as a means of getting more heat in the basement itself. This assures added comfort upstairs.

Mechanical features of coal stokers appeal to men. Economical operation can be presented in ways that appeal to both men and women. Prices of coal, gas, and fuel oil, vary in different parts of the country. No general claims of economy will apply, but in territories where the cost of producing one million BTU's by hand-fired coal is less than the cost of producing the same number of heat units by either gas or oil, stoker operations will usually cost less than hand-firing. Estimates of heating costs for proposed houses are worked out very accurately by heating engineers and made available to contractor-builders by manufacturers of heating equipment. These estimates furnish satisfactory comparisons, but are discounted by prospective home owners. Contractor-builders will find that their clients more readily accept cost records of owners for whom they have built.

An ideal way of comparing operating costs of heating plants will be used this year by a Chicago builder. He is planning to put up six houses, two of which will be heated by gas, two by oil, and two by coal stokers. He will make preliminary arrangements with owners to record their fuel and service bills.

Stokers are more efficient than hand-firing, because they use lower-priced fuel, and because they get more heat out of each pound of coal by burning the gases produced by preheating and coking. Where hand firing is said to be 40 to 50 per cent efficient, domestic stokers operate at about 65 per cent efficiency, depending on conditions of the heating plant, quality of the coal used, and ability of the plant to absorb the heat produced. If a furnace requires 11 tons of \$10 coke, it should use about ten tons of dust-treated bituminous stoker grade coal at \$6 to \$8 in an identical season; an operating economy of \$35 to \$50 a year. If a furnace requires 12 tons of mine-run Pocahontas (low volatile) at \$7.50 for hand firing, the stoker would show a \$40 saving. While comfort and convenience, plus the health factor of even heat and constant temperature are the strongest arguments in favor of automatic heat, the economy features of stokers are stressed.

If the original stoker installation is financed on a two- or three-year basis, operating economies will be less than annual payments. Where the stoker installation is included in 15- or 20-year financing of a house, operating economies, however, amount to more than the cost each year on the original installation. This saving can be converted into a very strong argument in favor of stokers, by pointing out to the prospective home owner that if he adds a room, or installs other conveniences not included in his original estimate, the amount of his monthly payments will inevitably be increased. A coal stoker is, however, one piece of mechanical equipment whose operating economies will actually reduce the amount of monthly financial outgo. A tabulation of annual savings over a period of fifteen or twenty years, after deducting cost of the original equipment, may mount up to \$1,000 or \$1,500 that an owner can spend without increasing his monthly payments. In this way, the stoker may enable the owner to have an added lavatory downstairs, additional kitchen cabinets or mechanical equipment, a more attractive recreation room, or some other attractive and much desired feature.

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